JVC

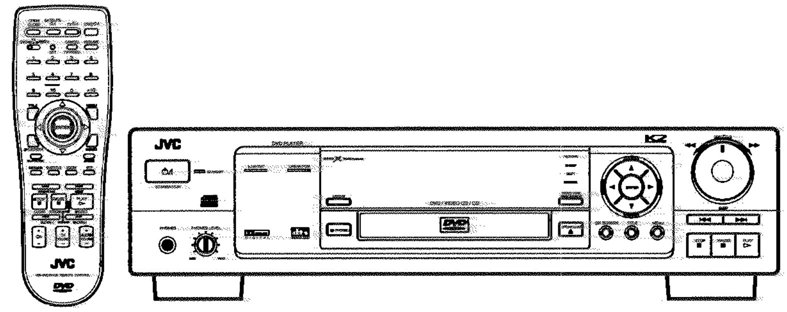
SERVICE MANUAL

DVD PLAYER

XV-501BK / XV-505GD

Area Suffix(XV-501BK)	
B	U.K.
E	Continental Europe
EN	Northern Europe
EE	Russian Europe

Area Suffix(XV-505GD)	
B	U.K.
E	Continental Europe
EN	Northern Europe



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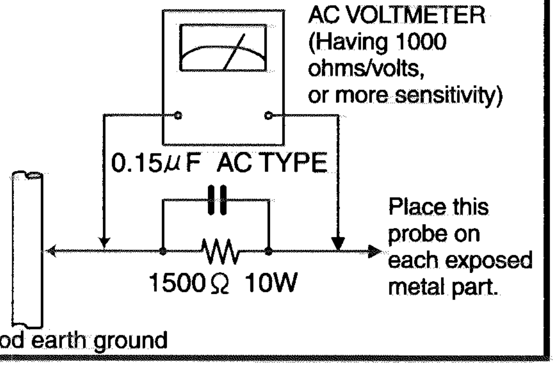
No.20754
May. 1999

Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer`s warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage current check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet , particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.)
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15µF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now reverse the plug in the AC outlet and repeat each measurement voltage measured any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).


AC VOLTMETER
(Having 1000 ohms/volts, or more sensitivity)
0.15µF AC TYPE
Place this probe on each exposed metal part.
1500Ω 10W
Good earth ground

Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

⚠ ***CAUTION*** **Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.**

Important for laser products

1. **CLASS 1 LASER PRODUCT**
2. **DANGER :** Invisible laser radiation when open and inter lock failed or defeated. Avoid direct exposure to beam.
3. **CAUTION :** There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.
4. **CAUTION :** The compact disc player uses invisible laserradiation and is equipped with safety switches whichprevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. **CAUTION :** If safety switches malfunction, the laser is able to function.
6. **CAUTION :** Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

⚠ ***CAUTION*** **Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.**

VARNING : Osynlig laserstrålning är denna del är öppnad och spårren är urkopplad. Betrakta ej strålen.

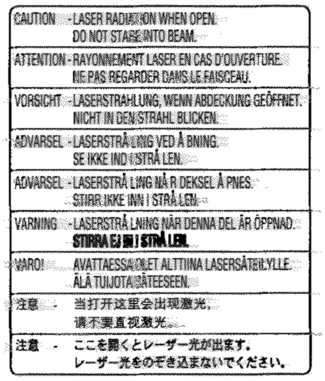
VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle.Älä katso säteeseen.

ADVARSEL : Usynlig laserstråling ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstråling ved åpning,når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS

WARNING LABEL



CAUTION - LASER RADIATION WHEN OPEN.
DO NOT STARE INTO BEAM.

ATTENTION - RAYONNEMENT LASER EN CAS D'OUVERTURE.
NE PAS REGARDER DANS LE FAISCEAU.

VORSICHT - LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET.
NICHT IN DEN STRAHL BLICKEN.

ADVARSEL - LASERSTRÅLING VED ÅBNING.
SE IKKE IND I STRÅLEN.

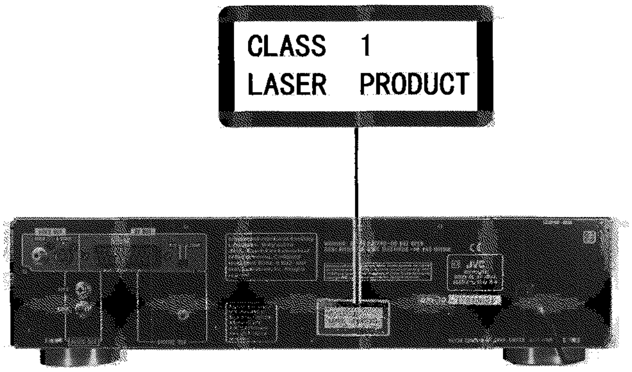
ADVARSEL - LASERSTRÅLING NÅR DEKSEL ÅPNES.
STIRR IKKE INN I STRÅLEN.

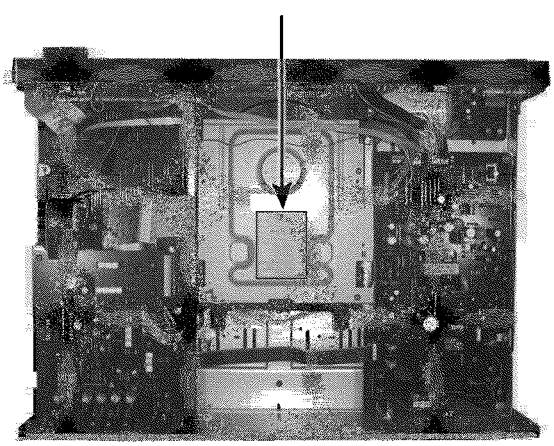
VARNING - LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD.
STIRRA EJ [illegible] I STRÅLEN.

VARO! AVATTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
ÄLÄ TUIJOTA SÄTEESEEN.

注意 - 当打开这里会出现激光，
请不要直视激光。

注意 - ここを開くとレーザー光が出ます。
レーザー光をのぞき込まないでください。





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DVD PLAYER

XV-501BK/XV-505GD

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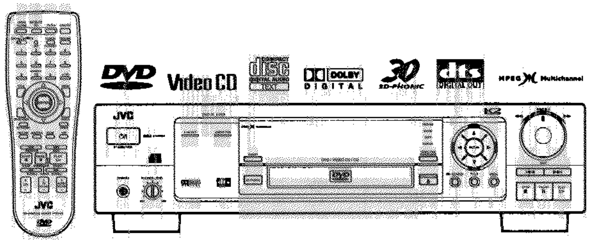
DVD
Video CD
COMPACT DISC DIGITAL AUDIO TEXT
DOLBY DIGITAL
3D-PHONIC
dts DIGITAL OUT
MPEG Multichannel
JVC

INSTRUCTIONS

For Customer Use:
Enter below the Model No. and Serial No. which are located on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No. ____________

Serial No. ____________

LET0145-003A
[B, E]

Printed in Japan
0399TTMUBNPRI

JVC
VICTOR COMPANY OF JAPAN, LIMITED

EN.

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Features

Picture functions

- ■ **Strobe function**
  The unit can display a list of still pictures on the TV screen.
- ■ **Digest function**
  You can select the desired title from the opening scenes displayed on the TV screen.
- ■ **Angle function***
  You can enjoy variety of scene angles.
- ■ **Zoom function**
  You can view scenes close-up.
- ■ **VFP function**
  You can change the picture quality.
- ■ **Parental lock***
  When a movie which includes violent scenes is played back, the scenes are cut or replayed with other scenes so as not to be viewed by children.

Compatible with a variety of sound formats

- ■ **High quality digital sound**
  You can enjoy high quality sound with Dolby Digital, MPEG Audio or Linear-PCM.
- ■ **Surround function***
  The unit is compatible with Dolby Digital surround, DTS surround, and MPEG Multi-channel by connecting the DIGITAL OUT terminal on the rear panel.
- ■ **3D PHONIC function**
  You can enjoy surround sound with your 2 channel system.

Other functions

- ■ **Multi-language subtitles and sound***
  You can select the subtitle or sound language.
- ■ **Multi-disc player**
  You can also enjoy Audio CD discs and Video CD discs.
- ■ **Operation from the on-screen display**
  You can operate the unit from the on-screen display.

Functions with (*) mark only work on a DVD disc that is compatible with each function.

Notes on care and handling

Important cautions

Installation of the unit

- Select a place which is level, dry and neither too hot nor too cold (between 5°C and 35°C, 41°F and 95°F).
- Leave sufficient distance between the unit and the TV.
- Do not use the player in a place subject to vibrations.

Power cord

- Do not handle the power cord with wet hands!
- A small amount of power (2 watts) is always consumed while the power cord is connected to the wall outlet.
- When unplugging the player from the wall outlet, always pull the plug, not the power cord.

To prevent malfunction of the unit

- There are no user-serviceable parts inside. If anything goes wrong, unplug the power cord and consult your dealer.
- Do not insert any metallic object into the unit.
- Do not use any non-standard shape disc available on the market, because it may damage the unit.
- Do not use a disc with tape, seals, or paste on it, because damage to the unit may result.

Note about copyright laws

- Please check the copyright laws in your country before recording from DVD VIDEO, Audio CD, and Video CD discs. Recording of copyrighted material may infringe copyright laws.

Note about the copyguard system

- The DVD VIDEO disc is protected by the copyguard system. When you connect the unit to your VCR directly, the copyguard system activates and the picture may not be played back correctly.

Safety precautions

Avoid moisture, water and dust

Do not place your player in moist or dusty places.

Avoid high temperatures

Do not expose the unit to direct sunlight or place it near a heating device.

When you're away

When away on travel or otherwise for an extended period of time, remove the plug from the wall outlet.

Do not insert foreign objects into the unit

Do not insert wires, hairpins, coins, etc. into the unit.

Do not block the vents

Blocking the vents may damage the unit.

Care of the cabinet

When cleaning the unit, use a soft cloth and follow the relevant instructions on the use of chemically-coated cloths. Do not use benzene, thinner or other organic solvents and disinfectants. These may cause deformation or discoloring.

If water gets inside the unit

Turn off the power switch and remove the plug from the wall outlet, then call the store where you made your purchase. Using the unit in this state may cause a fire or electrical shock.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

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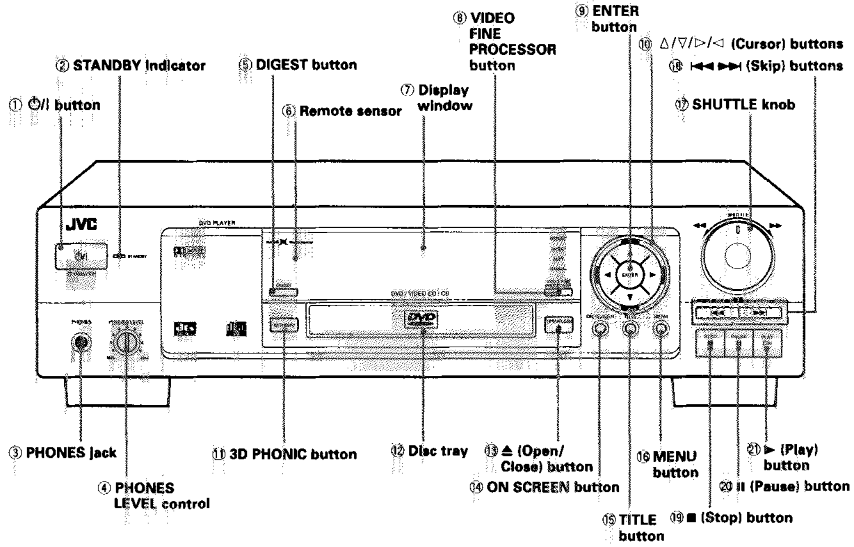
Names of parts and controls

Refer to the corresponding pages indicated in () for details.

Front panel



① **⏻/I (Standby/On) button (17)**
Turns the unit on or off (standby).

② **STANDBY indicator**
Lights when the power cord is connected and the unit is on standby. When the unit is turns on, the STANDBY indicator goes off.

③ **PHONES jack**
Connection jack for headphones.

④ **PHONES LEVEL control**
Adjusts the volume level of headphones connected to the PHONES jack.

⑤ **DIGEST button (32)**
Displays beginning scenes of each title, chapter, or track on the TV screen.

⑥ **Remote sensor**
Recieves the signal from the remote control unit.

⑦ **Display window**
Indicates the current status of the unit.

⑧ **VIDEO FINE PROCESSOR button (45)**
Change the picture quality.

⑨ **ENTER button**
Executes a selected item in a menu or on-screen display.

⑩ **△/▽/▷/◁ (Cursor) buttons**
Selects an item in on-screen displays or menus.

⑪ **3D PHONIC button (46)**
Produces a simulated surround effect.

⑫ **Disc tray (21)**
Used to load discs.

⑬ **▲ (Open/Close) button (21)**
Opens and closes the disc tray.

⑭ **ON SCREEN button (8)**
Displays an on-screen display of the unit on the TV screen or monitor.

⑮ **TITLE button (26)**
Displays a title menu of DVD on the TV screen or monitor.

⑯ **MENU button (26)**
Displays a menu of DVD on the TV screen or monitor.

⑰ **SHUTTLE knob (23, 33)**
Performs fast forward/backward and slow motion playback.

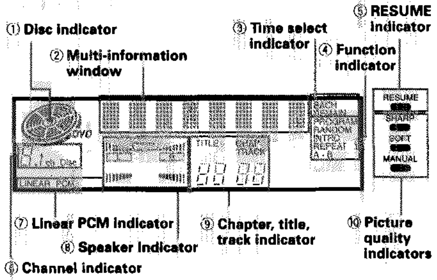
⑱ **⏮ ⏭ (Skip) buttons (23, 28)**
Performs skipping or previous/next operation.

⑲ **■ (Stop) button (22)**
Stops playback.

⑳ **II (Pause) button (23)**
Pauses during playback.

㉑ **▶ (Play) button (22)**
Starts playback. Also, used as a SELECT button for PBC of Video CDs.

Display window


① Disc indicator
② Multi-information window
③ Time select indicator
④ Function indicator
⑤ RESUME indicator
⑦ Linear PCM indicator
⑧ Speaker indicator
⑥ Channel indicator
⑨ Chapter, title, track indicator
⑩ Picture quality indicators
DVD
TITLE
CHAP
TRACK
EACH
REMAIN
PROGRAM
RANDOM
INTRO
REPEAT
A-B
RESUME
SHARP
SOFT
MANUAL
LINEAR PCM

① **Disc indicator**
Lights when a disc is in the unit. "DVD" also appears when a DVD disc is in the unit.

② **Multi-information window**
Displays time, text, and additional information.

③ **Time select indicator**
Shows what the time information in the Multi-information window means.

④ **Function indicator**
Activated function indicators light up.

⑤ **RESUME indicator**
Lights when a point to be resumed from is stored.

⑥ **Channel indicator**
Displays number of channels in the currently selected audio playback format.

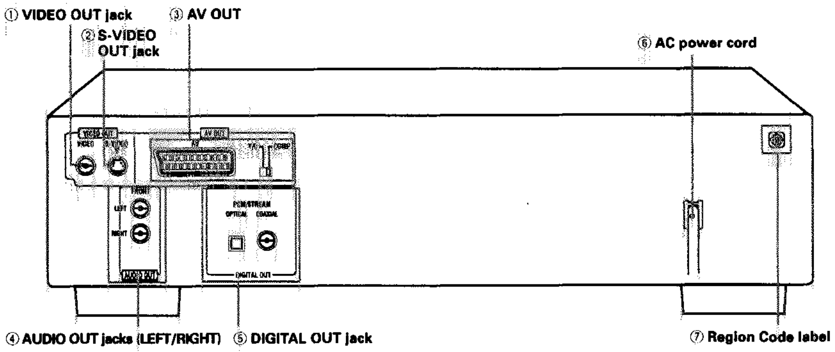
⑦ **Linear PCM indicator**
Lights only when the playback disc contains linear PCM data. This indicator also lights while an Audio CD is placed in the unit.

⑧ **Speaker indicator**
Lights during disc playbak. ▭ lights when signals are output from the video output jacks. When the 3D PHONIC function is ON, ▨ ▨ also lights.

⑨ **Chapter, title, track indicator**
Displays chapter, title, or track number.

⑩ **Picture quality indicators**
Selected indicator of the picture quality lights up.

Rear panel


① VIDEO OUT jack
② S-VIDEO OUT jack
③ AV OUT
⑥ AC power cord
④ AUDIO OUT jacks (LEFT/RIGHT)
⑤ DIGITAL OUT jack
⑦ Region Code label
VIDEO OUT
VIDEO
S-VIDEO
AV OUT
Y/C
COMP
FRONT
LEFT
RIGHT
AUDIO OUT
PCM/STREAM
OPTICAL
COAXIAL
DIGITAL OUT

① **VIDEO OUT jack (12)**
Outputs a composite video signal.

② **S-VIDEO OUT jack (12)**
Outputs an S-video signal.

③ **AV OUT (13)**
Standard 21-pin SCART connectors (feed the video and audio signals). The video output signal is selected from composite (COMP) and Y/C by the COMP-Y/C switch. The audio signal is same as AUDIO OUT.

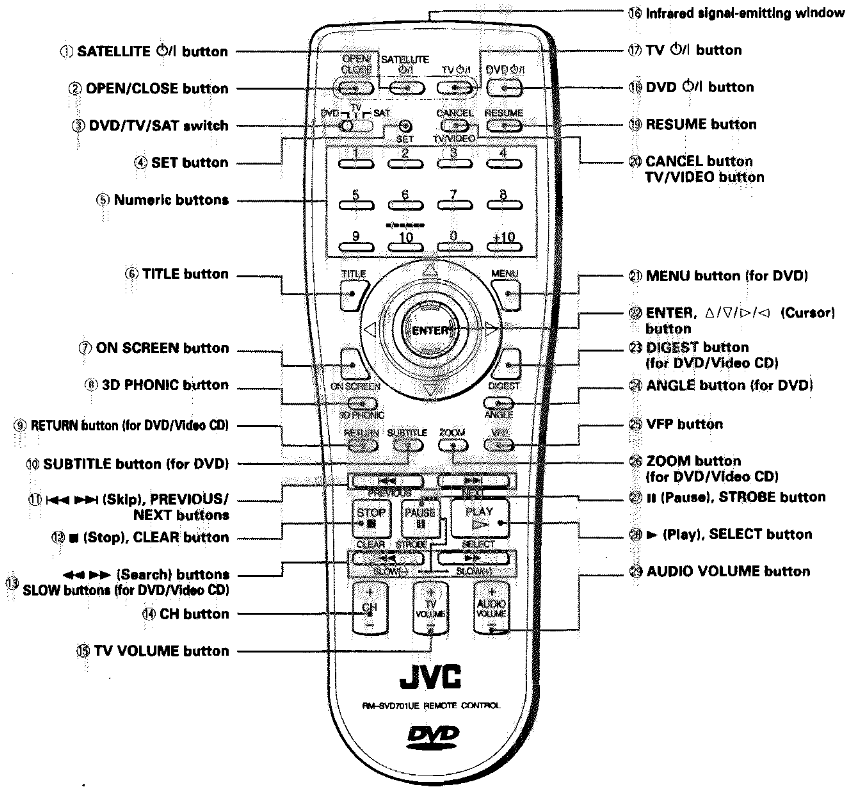
④ **AUDIO OUT jacks (LEFT/RIGHT) (12, 14, 15)**
Outputs stereo analog audio signals.

⑤ **DIGITAL OUT jack (15)**
Outputs digital audio signals. Both coaxial and optical connectors are provided.

⑥ **AC power cord (16)**
Connects to the wall outlet.

⑦ **Region Code label (11)**
Shows Region Code number.

Remote control unit


① SATELLITE ⏻/I button
② OPEN/CLOSE button
③ DVD/TV/SAT switch
④ SET button
⑤ Numeric buttons
⑥ TITLE button
⑦ ON SCREEN button
⑧ 3D PHONIC button
⑨ RETURN button (for DVD/Video CD)
⑩ SUBTITLE button (for DVD)
⑪ ◀◀ ▶▶ (Skip), PREVIOUS/ NEXT buttons
⑫ ■ (Stop), CLEAR button
⑬ ◀◀ ▶▶ (Search) buttons SLOW buttons (for DVD/Video CD)
⑭ CH button
⑮ TV VOLUME button
⑯ Infrared signal-emitting window
⑰ TV ⏻/I button
⑱ DVD ⏻/I button
⑲ RESUME button
⑳ CANCEL button TV/VIDEO button
㉑ MENU button (for DVD)
㉒ ENTER, △/▽/▷/◁ (Cursor) button
㉓ DIGEST button (for DVD/Video CD)
㉔ ANGLE button (for DVD)
㉕ VFP button
㉖ ZOOM button (for DVD/Video CD)
㉗ II (Pause), STROBE button
㉘ ▶ (Play), SELECT button
㉙ AUDIO VOLUME button
OPEN/CLOSE
SATELLITE ⏻/I
TV ⏻/I
DVD ⏻/I
DVD TV SAT
SET
CANCEL
TV/VIDEO
RESUME
1
2
3
4
5
6
7
8
9
10
0
+10
TITLE
MENU
ENTER
ON SCREEN
DIGEST
3D PHONIC
ANGLE
RETURN
SUBTITLE
ZOOM
VFP
PREVIOUS
NEXT
STOP
PAUSE
PLAY
CLEAR
STROBE
SELECT
SLOW(-)
SLOW(+)
CH
TV VOLUME
AUDIO VOLUME
JVC
RM-SVD701UE REMOTE CONTROL
DVD

① **SATELLITE ⏻/I button (19)**
Turns the satellite tuner on or off.

② **OPEN/CLOSE button (21)**
Opens and closes the disc tray.

③ **DVD/TV/SAT switch (18, 19, 20)**
Selects the function of the numeric buttons to control the corresponding device.

④ **SET button (18, 19)**
Used to set the manufacturer's code for operating another manufacturer's TV, satellite tuner from the remote control unit.

⑤ **Numeric buttons (18, 19, 25)**
Depending on the selection of the DVD/TV/SAT. switch, they are used for entering a title, track or chapter number, or selecting a TV channel.

⑥ **TITLE button (26)**
Displays a title menu of DVD on the TV screen or monitor. Switches the display in the display window (for Audio CD).

⑦ **ON SCREEN button (8, 50)**
Displays an on-screen display of the player on the TV screen or monitor.

⑧ **3D PHONIC button (46)**
Produces a simulated surround effect.

⑨ **RETURN button (for DVD/Video CD)**
Returns to the previous menu.

⑩ **SUBTITLE button (for DVD) (42)**
Turns subtitles on or off.

⑪ **⏮ ⏭ (Skip), PREVIOUS/NEXT (for DVD/Video CD) buttons (23, 26, 27)**
Performs skipping a chapter, title or track.
Also used for the page selection of a menu screen (for DVD/Video CD).

⑫ **■ (Stop), CLEAR button (22)**
Stops playback.
Also used to erase all the programmed tracks for the program play (for Audio CD/Video CD).

⑬ **◀◀ ▶▶ (Search), SLOW (for DVD/Video CD) buttons (23, 33)**
Performs fast forward/backward playback operations.
Also used for slow-motion playback of a picture (for DVD/Video CD).

⑭ **CH button (18, 19)**
Changes the channels of TV or satellite tuner.

⑮ **TV VOLUME button (18, 22)**
Adjusts the TV volume.

⑯ **Infrared signal-emitting window**
Point this window toward the remote sensor on the front panel when pressing buttons.

⑰ **TV ⏻/I button (18)**
Turns the TV on or off.

⑱ **DVD ⏻/I button (17)**
Turns the unit on or off (standby).

⑲ **RESUME button (24)**
Stores the location to resume playback from later.

⑳ **CANCEL, TV/VIDEO button (18, 35)**
Cancels the previous settings.
Also used to switch the input mode of TV.

㉑ **MENU button (for DVD) (26)**
Displays a menu of DVD on the TV screen or monitor.

㉒ **ENTER, △/▽/▷/◁ (Cursor) button**
Executes a selected item in a menu or on-screen display when pressing the button. Selects an item in the on-screen display or title menus or menus of DVD when tilting.

㉓ **DIGEST button (for DVD/Video CD) (32)**
Displays beginning scenes of each title, chapter, or track on the TV screen.

㉔ **ANGLE button (for DVD) (40)**
Changes camera angles during playback of a DVD containing multiple camera angles.

㉕ **VFP button (45)**
Changes the picture quality.

㉖ **ZOOM button (for DVD/Video CD) (34)**
Scene in a close-up view.

㉗ **II (Pause), STROBE (for DVD/Video CD) button (23, 33)**
Pauses during playback.
Also used to display nine continuous still pictures (for DVD/Video CD).

㉘ **▶ (Play), SELECT button (22, 27)**
Starts playback.
Also used as a SELECT button in the PBC mode (for Video CD).

㉙ **AUDIO VOLUME button (22)**
Adjusts the volume of a JVC AV amplifier or receiver.

Display information

The unit provides several on-screen displays and on-screen guide icons to help you operate the unit.

On-screen displays

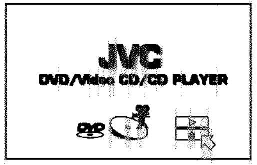
The unit provides several on-screen displays as shown below for choosing preferences for initial settings and functions which are not frequently used.

To access on-screen displays

Press ON SCREEN (Note that operation for accessing the "PARENTAL LOCK" on screen displays is different.). Depending on the type of disc inserted (or "no disc") and the player's mode, a proper on-screen display is accessed.

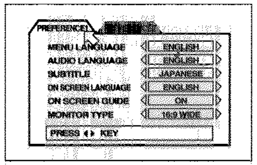
Basic operations in on-screen displays

- appears at the on-screen display. You can move using . is used to select items you want to work with.
- With an item like ◁ 1/3 ▷, you can change the setting by placing on the item and press ENTER.
- ◁ REPEAT ▷ - type item works when you place on the item and press ENTER.
- In the message box, the operation to be performed is displayed according to the item pointed by .
- Numbers are entered using 0 to 10, +10.
- Some functions become effective by pressing ENTER after specifying necessary entries.
- Pressing ON SCREEN again exits the on-screen display.

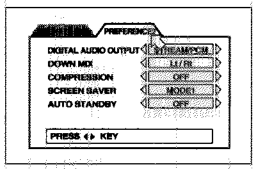


Opening display

Appears when the unit turns on.



MENU LANGUAGE ENGLISH
AUDIO LANGUAGE ENGLISH
SUBTITLE JAPANESE
ON SCREEN LANGUAGE ENGLISH
ON SCREEN GUIDE ON
MONITOR TYPE 16:9 WIDE



DIGITAL AUDIO OUTPUT STREAM/PCM
DOWN MIX Lt/Rt
COMPRESSION OFF
SCREEN SAVER MODE1
AUTO STANDBY OFF

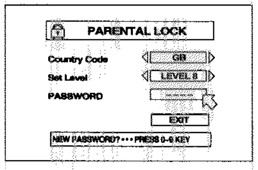
Preference displays (see page 50)

You can set preferences on these displays.

To display the Preference display

1 Press STOP to stop the unit.
If the current disc is not a DVD disc, you have to remove the disc from the tray.

2 Press ON SCREEN.

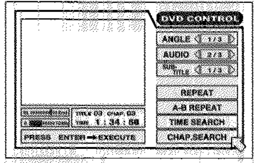

PARENTAL LOCK
Country Code
GB
Set Level
LEVEL 8
PASSWORD
EXIT
NEW PASSWORD? ••• PRESS 0-9 KEY

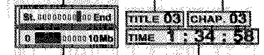
Parental Lock on-screen display (see page 57)

You can set the parental lock from this display.

To display the Parental Lock on-screen display

Press ⊖ while holding down ■.
The Parental Lock on-screen display appears on the TV screen.


DVD CONTROL
ANGLE 1/3
AUDIO 2/3
SUB-TITLE 1/3
REPEAT
A-B REPEAT
TIME SEARCH
CHAP.SEARCH
TITLE 03 CHAP. 03
TIME 1 : 34 : 58
PRESS ENTER → EXECUTE


St. End
0 10Mb
TITLE 03
CHAP. 03
TIME 1 : 34 : 58

Current relative position the title (St: start, End: end).

Current title number

Current chapter number

Transmission rate

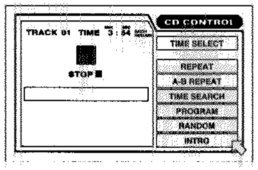
Elapsed time from the beginning of the current title

The DVD on-screen display during playback

You can select and set various function for DVD playback from this display.

To display the DVD on-screen display

During DVD playback, press ▢.

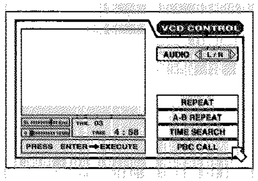

CD CONTROL
TRACK 01 TIME 3 : 54
STOP ■
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

The CD on-screen display

You can select and set various function for Audio CD playback from this display.

To display the CD on-screen display

During Audio CD playback or stop mode, press ▢.

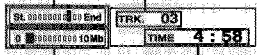

VCD CONTROL
AUDIO L/R
REPEAT
A-B REPEAT
TIME SEARCH
PBC CALL
TRK 03
TIME 4 : 58
PRESS ENTER → EXECUTE

The Video CD on-screen display during playback

You can select and set various functions for Video CD playback on this display.
When a Video CD disc is stopped, the same on-screen display which appears when an Audio CD disc is stopped appears.

To display the Video CD on-screen display

During Video CD playback or stop mode, press ▢.


St. End
0 10Mb
TRK. 03
TIME 4 : 58

Current relative position of the track (St: start, End: end).

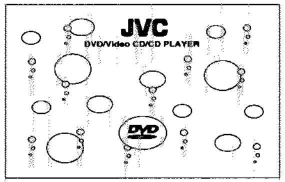
Current track number

Transmission rate

Elapsed time from the beginning of the current track

To prevent the monitor from burning out [SCREEN SAVER]

A television monitor screen may be burned out if a static picture is displayed for a long time. To prevent this, the unit automatically activates the screen saver function if a static picture, such as an on-screen display or menu, is displayed for over 5 minutes.


JVC
DVD/Video CD/CD PLAYER
DVD

- Pressing any button on the unit or the remote control unit will release the screen saver function and return to the previous display.
- You can select one of several screen saver modes available (see page 56).
- When this function is set to "DIMMER", the display window on the panel always gets dark (FL Dimmer) in addition to the screen saver function (see page 56).

On-screen guide icons

During DVD playback, you may see icons displayed over the picture. These have the following meanings.

: Displayed at the beginning of a scene recorded from multiple angles. (See page 40.)

: Displayed at the beginning of a scene recorded with multiple audio languages. (See page 43.)

: Displayed at the beginning of a scene recorded with multiple subtitles language. (See page 42.)

You can set the unit not to display on-screen icons above via the preference settings described on page 53.

About invalid operation icon

When you press a button, if the unit does not accept its operation, ⊘ appears on your television screen. Operations are occasionally unacceptable even if ⊘ is not displayed.

Note that some operations may not be accepted. For example, some discs may not allow fast forward, fast backward or slow-motion playback.

Preliminary knowledge about discs

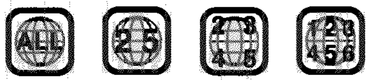
Playable disc types

Playable and non-playback disc types are as follows:

Playable discs					
DVD VIDEO		Video CD		Audio CD	
Non-playable discs					
DVD-ROM CD-R	DVD-RAM CD-ROM	DVD Audio PHOTO CD	DVD-R CD-RW	DVD-RW CD-EXTRA	CD-G

Notes on DVD VIDEO discs

- DVD players and DVD discs have their own Region Code numbers. This player only can play back DVD discs whose Region Code numbers include "2". Examples of playable DVD discs:

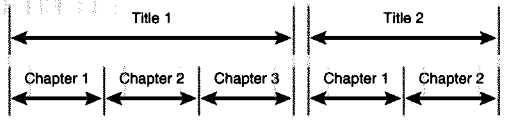


- This player accommodates discs for the PAL sytem.
- Playing back discs listed as "Non-playable discs" in the table above may generate noise and damage speakers

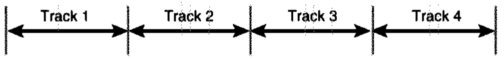
Disc construction

A DVD disc is comprised of "titles", while an Audio CD or Video CD is comprised of "tracks." Each title may be divided into some "chapters." For example, if a DVD disc contains some movies, each movie may have its own title number, and each movie may be divided into some chapters. In a DVD karaoke disc, each song usually has its own title number and does not have chapters. In general, each title has independent content, while each chapter in the same title has continuity.

(Example: DVD disc)



(Example: Audio CD/Video CD)



Connections

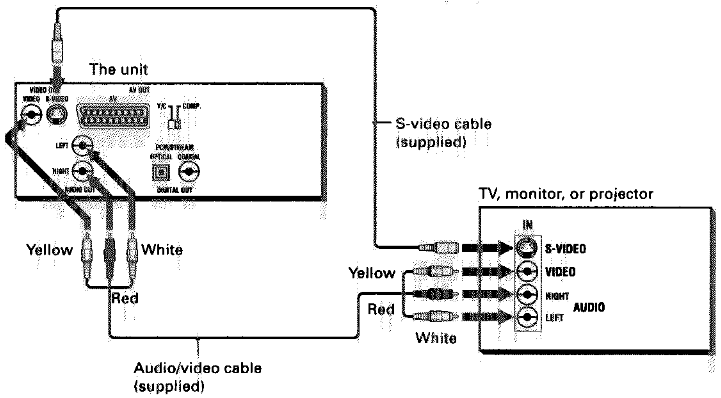
Before using the unit, you have to connect the unit to a TV or amplifier. By connecting to an amplifier which has a digital terminal or Dolby digital capability, you can enhance the sound quality.

Before making any connections

- **Do not connect the AC power cord until all other connections have been made.**
- Since different components often have different terminal names, carefully read the instructions supplied with the component you wish to connect.

To connect to a TV, monitor, or projector with the audio input and video input jacks

You can enjoy using the unit by simply connecting it to a television set. To hear improved audio sound quality, connect the audio outputs to your audio equipment. (See the following pages.)



Connect the unit to a television set equipped with stereo audio input and video input jacks using the supplied audio/video cables.

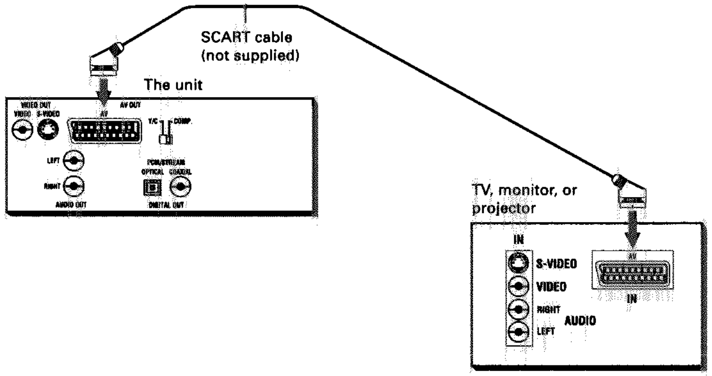
- If your television set has a monaural audio input instead of stereo, you need to use an optional audio cable which converts stereo audio output to monaural.
- If your television set has an S-video input, you should connect it with the S-VIDEO output of the unit using the supplied S-video cable in addition to the (standard) video connection to get better picture quality.

NOTES

- **Connect VIDEO OUT of the unit to the video input of a television set. Connecting VIDEO OUT of the unit to a TV via a VCR may cause a monitor problem when playing back a copy-protected disc.**
- **Do not connect the player to a NTSC television. Connect it to a PAL television.**

To connect to a TV, monitor, or projector with the SCART connector

You can enjoy using the unit by simply connecting it with your television set via a 21-pin SCART cable. To hear audio sound with better quality, connect the audio outputs to your audio equipment. (See the following pages.)


SCART cable
(not supplied)
The unit
VIDEO OUT
VIDEO
S-VIDEO
AV OUT
AV
Y/C
COMP.
LEFT
RIGHT
AUDIO OUT
PCM/STREAM
OPTICAL
COAXIAL
DIGITAL OUT
TV, monitor, or projector
IN
S-VIDEO
VIDEO
RIGHT
AUDIO
LEFT
AV
IN

Connect the player's AV OUT connector with your TV's SCART connector using an optional SCART cable.

- If your TV's SCART connector is compatible only with the regular video signal, set the COMP.-Y/C switch to "COMP.".
- If your TV's SCART connector is compatible with the Y/C signal, set this switch to "Y/C". You will enjoy better-quality pictures.

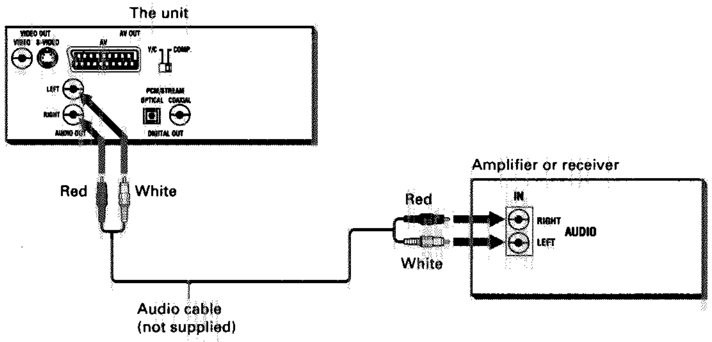
NOTE

- **Do not connect the player to a NTSC television. Connect it to a PAL television.**

To connect to an audio amplifier or receiver

Connection to an audio amplifier or receiver

You can enjoy high-quality audio by connecting the unit's audio outputs to your amplifier or receiver.

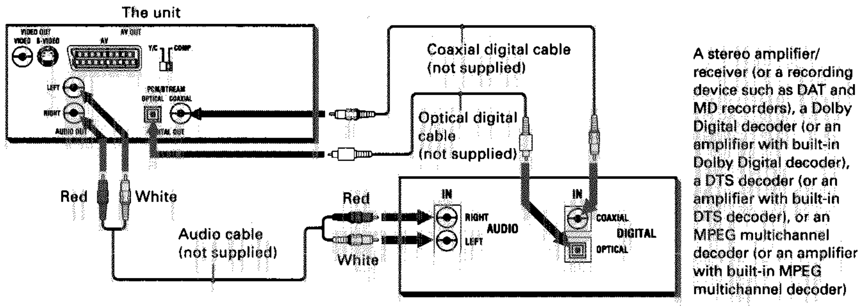

The unit
VIDEO OUT
VIDEO
S-VIDEO
AV OUT
AV
Y/C
COMP.
LEFT
RIGHT
AUDIO OUT
PCM/STREAM
OPTICAL
COAXIAL
DIGITAL OUT
Red
White
Audio cable
(not supplied)
Amplifier or receiver
Red
White
IN
RIGHT
LEFT
AUDIO

- Connect the unit's AUDIO OUT to any line-level inputs (such as AUX, DVD, CD, etc.) of an audio amplifier or receiver.

To connect to audio equipment with a digital input

Connection to a stereo amplifier/receiver (or a recording device such as DAT and MD recorders) which provides digital stereo input(s), a Dolby Digital decoder (or an amplifier with built-in Dolby Digital decoder), a DTS decoder (or an amplifier with built-in DTS decoder), or an MPEG multichannel decoder (or an amplifier with built-in MPEG multichannel decoder).

You can enhance the sound quality by connecting the unit's DIGITAL OUT (coaxial or optical) to the digital input of an amplifier, DAT or MD recorder by using an optional digital cable. The digital stereo audio signal from a disc is directly transferred. If you connect to a Dolby Digital decoder (or an amplifier with built-in Dolby Digital decoder), a DTS decoder (or an amplifier with built-in DTS decoder), or an MPEG multichannel decoder (or an amplifier with built-in MPEG multichannel decoder) by usng an optional digital cable (coaxial or optical), you can enjoy high-quality audio and surround sound. When you make a digital connection, leave the stereo analog audio connection as it is. Otherwise, depending on the disc type, no audio may be reproduced.



The unit
VIDEO OUT
VIDEO
S-VIDEO
AV OUT
AV
Y/C
COMP
LEFT
RIGHT
AUDIO OUT
PCM/STREAM
OPTICAL
COAXIAL
DIGITAL OUT
Coaxial digital cable (not supplied)
Optical digital cable (not supplied)
Red
White
Audio cable (not supplied)
Red
White
IN
RIGHT
AUDIO
LEFT
IN
COAXIAL
DIGITAL
OPTICAL
A stereo amplifier/receiver (or a recording device such as DAT and MD recorders), a Dolby Digital decoder (or an amplifier with built-in Dolby Digital decoder), a DTS decoder (or an amplifier with built-in DTS decoder), or an MPEG multichannel decoder (or an amplifier with built-in MPEG multichannel decoder)

- For digital connection, connect the unit's DIGITAL OUT (coaxial or optical) to the digital input of a decoder or an amplifier with built-in Dolby Digital or DTS or MPEG Multichannel decoder using an optional digital cable.

NOTES

- **DTS (Digital Theater System)**
  DTS is a newly-developed surround system which can handle more data than Dolby Digital, providing better audio quality.
  Though the number of audio channels is 5.1 which is same as Dolby Digital, DTS provides fat sound and better signal-to-noise ratio, thanks to the lower audio compression ratio format. It also provides wide dynamic range and better separation, resulting in magnificent sound.
- **MPEG multichannel**
  MPEG multichannel is a surround system format which can handle the augmentative 7.1-channel surround format, as well as the 5.1-channel format.
- **When you connect the audio equipment with a digital input, before using, change the "DIGITAL AUDIO OUTPUT" setting in the "PREFERENCE 2" on-screen display according to the audio equipment connected to the digital input. When the "DIGITAL AUDIO OUTPUT" setting is not set correctly, loud noise may be played back from speakers, and it may cause damage to your speakers. See "DIGITAL AUDIO OUTPUT" on page 54.**
- **With this connection, the unit's settings for "COMPRESSION", and "DOWN MIX" setting in the "PREFERENCE 2" on-screen display are invalid. Settings for these items must be made from the decoder.**

Turn on the unit

To connect the power cord

When all the connections have been made, insert the power plug into the wall outlet firmly. The STANDBY indicator lights and setup is completed.

⚠ Warning

- Disconnect the power cord if you are not going to use the unit for a long time.
- Disconnect the power cord before cleaning the unit.
- Disconnect the power cord before moving the unit.
- Do not connect or disconnect the power cord with wet hands.
- Do not pull the power cord when disconnecting it, as this may damage the cord and cause fire, electric shock, or other accidents.

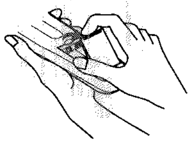
⚠ Caution

- Do not damage, remodel, twist, or pull the power cord, as this may cause fire, electric shock, or other accidents.
- Contact a dealer and get a new power cord if the cord is damaged. A damaged cord may cause fire, electric shock, or other accidents.
- Do not put anything heavy, or the unit, on the power cord, as this may cause fire, electric shock, or other accidents.

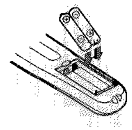
To install batteries in the remote control unit

The battery compartment is located on the back of the remote control unit.

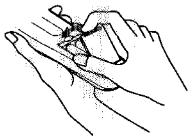
1 Press down on the point shown by the arrow at the top of the compartment cover, and pull up the cover to open the compartment.



2 Place the two accessory R6P (SUM-3)/AA(15F) batteries in the remote control according to the polarity markings ("+" and "–") inside the compartment and on the batteries.



3 Place the cover over the compartment, and press down lightly.



- The batteries will last about six months with normal use. If the functions of the remote control become erratic, replace the batteries. See "Precautions for the safe use of batteries" below for more information.

Precautions for the safe use of batteries

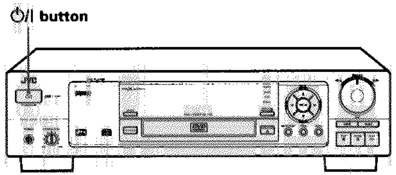
Observe the following precautions for the safe use of batteries. If they are used improperly, their life will be shortened, they may burst or their contents may leak.

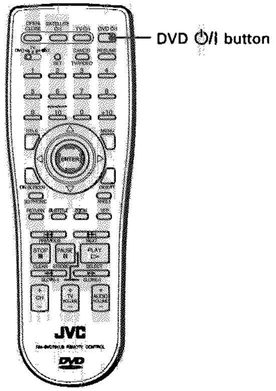
Precaution

- **Remove the batteries from the remote control if it is not going to be used for a long period of time.**
- **Remove dead batteries and dispose of them properly.**
- **Never leave dead batteries lying around, take them apart, mix them with other refuse, or throw them into an incinerator.**
- **Never touch liquid that has leaked out of a battery.**
- **Do not mix new and old batteries, or batteries of different types, when replacing them.**

To turn on/off the unit

Press ⏻/I on the front panel or press DVD ⏻/I on the remote control unit.





Hints

You can turn on the unit by pressing ▶ on the front panel or PLAY on the Remote control unit. In this operation, the unit starts playback when the disc is set. If not set, the disc tray opens.

You can also turn on the unit by pressing OPEN/CLOSE on the front panel or OPEN/CLOSE on the remote control unit. In this case, the disc tray opens.

NOTE

- **Even if you press ⏻/I or DVD ⏻/I to turn off the unit, the unit is not disconnected from the AC power source as long as it is connected to the wall outlet. This state is called the standby mode. In this state, the unit is designed to consume a very small quantity of power.**

Using the remote control unit

You can operate the unit with the remote control unit, and you can also operate your TV or other components with the remote control unit.

To use the remote control unit for TV operation

You can operate a JVC TV with the remote control unit. To operate another manufacturer's TV, you have to change the remote control signal. Also refer to the manual supplied with your TV.

Changing the remote control signal

1 Set DVD-TV-SAT on the remote control unit to TV.

2 Press and hold TV⏻/I, then press SET. Do not release TV⏻/I. Keep holding TV⏻/I until the next step is completed.

3 Holding TV⏻/I, enter the manufacturer code (two digits) using 0 to 9. See the lists on the left to find the manufacturer code.

4 Release TV⏻/I.

The following buttons can be used for operating the TV:

TV⏻/I	Turns the TV on or off.
CH +/–	Changes the TV channels. (with DVD-TV-SAT set to TV only)
VOLUME +/–	Adjusts the TV volume.
0 to 9	Selects the TV channels (with DVD-TV-SAT set to TV only)
CANCEL TV/VIDEO	You can switch input mode (either TV or VIDEO). (with DVD-TV-SAT set to TV only)

5 Try to operate your TV by pressing TV⏻/I. If your TV turns on or off, you have entered the correct code.

Manufacturer code list

No.	Manufacturer
01	JVC
02	JVC
03	JVC
04	JVC
05	BRANDT
05	NORDMENDE
05	SABA
05	TELEAVIA
05	TELEFUNKEN
05	THOMSON
06	FERGUSON
07	PHILIPS
08	BLAUPUNKT
08	GRUNDIG
09	SONY
10	PANASONIC
11	GRAETZ
11	ITT
11	LUXOR
11	SALORA
11	SELECO
12	MIVAR
13	HITACHI
14	TOSHIBA
15	MITSUBISHI
16	FINLUX
17	NOKIA
18	SHARP
19	SAMSUNG
20	FUNAI
21	GOLDSTAR
22	NEC

NOTE

- **If there is more than one code listed for your brand of TV, try each one until the correct one is entered.**

To use the remote control unit for satellite tuner operation

You can operate the satellite tuner with the remote control unit. To operate it, you have to change the remote control signal. Also refer to the manual supplied with it.

Changing the remote control signal

1 Set DVD–TV–SAT on the remote control unit to SAT.

2 Press and hold SATELLITE ⏻/I, then press SET.
Do not release SATELLITE ⏻/I. Keep holding SATELLITE ⏻/I until the next step is completed.

3 Holding SATELLITE ⏻/I, enter the manufacturer's code (two digits) using 0 to 9.
See the lists on the right to find the manufacturer's code.

4 Release SATELLITE ⏻/I.

The following buttons can be used for operating the satellite tuner (with DVD–TV–SAT set to SAT.):

SATELLITE ⏻/I	Turns the satellite tuner on or off.
+ CH –	Changes the channels.
0 to 9	Selects the channels.

5 Try to operate the satellite tuner by pressing SATELLITE ⏻/I.
If the satellite tuner turns on or off, you have entered the correct code.

Manufacturer's code list

No.	Manufacturer
01	AMSTRAD
02	AMSTRAD
03	AMSTRAD
04	RFT/ANKARO/QUADRAL/ SKYMASTER
05	RFT
06	KATHREIN
07	KATHREIN
08	KATHREIN/MASPRO
09	KATHREIN/PHILIPS
10	NOKIA
11	NOKIA/GRUNDIG
12	GRUNDIG/SIEMENS
13	PAGE
14	TECHNISAT
15	WISI
16	WISI/RADIX
17	FUBA/SEG
18	FTE

NOTE

- **If there is more than one code listed for your brand of the satellite tuner, try each one until the correct one is entered.**

Before operation

To turn on your TV and the unit

Remote Control

To operate your TV from the remote control unit, you have to set the remote control unit to operate your TV (see page 18).

1 Press TV ⏻/I to turn on your TV.

2 Press DVD ⏻/I to turn on the unit.

To select the source you want to operate

Remote Control

You can operate the unit with the remote control unit and operate some functions of your TV or the satellite tuner unit.

- To operate the unit, set DVD–TV–SAT on the remote control unit to DVD.

  To operate the unit, point the remote control unit at the remote sensor of the unit.

- To operate the TV, set DVD–TV–SAT on the remote control unit to TV.

  To operate the TV, point the remote control unit at the remote sensor of the TV.

- To operate the satellite tuner. unit, set DVD–TV–SAT on the remote control unit to SAT.

  To operate the satellite tuner. unit, point the remote control unit at the remote sensor of satellite tuner unit.

Hints

- You can adjust the volume level, select the TV channel, and change the input source of your TV from the remote control unit (see page 18).
- You can select the channel of your satellite tuner from the remote control unit (see page 19).

Inserting and removing discs

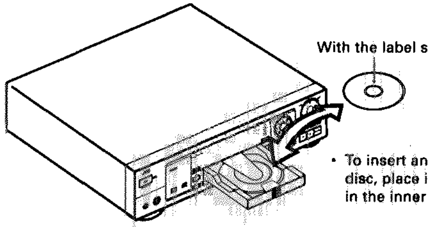
English

To insert or remove discs

Remote Control Front Panel

1 Press OPEN/CLOSE to open the disc tray.

2 Place the disc in the tray.



With the label side up.

- To insert an 8-cm disc, place it fitting in the inner recess.

3 Press OPEN/CLOSE to close the disc tray.

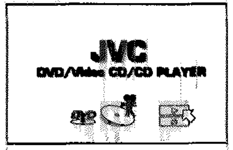
Hints

You can also insert and remove the disc from the on-screen display.

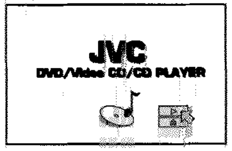
1. Use to move to [▲], then press ENTER to open the disc tray.
2. Place or remove the disc.
3. Use to move to [▲], then press ENTER to close the disc tray.

Information about the opening display

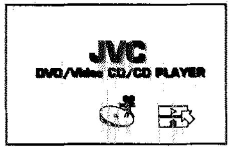
When you insert a DVD VIDEO disc



When you insert an Audio CD disc



When you insert a Video CD disc



NOTES

- **The unit can playback DVD VIDEO, Audio CD, and Video CD discs only. Do not load other disc types. For details, see page 11.**
- **When loading a disc in the tray, be sure to position the disc inside the recess. Otherwise, the disc may be damaged when the tray is closed, and the disc may not be removable from the unit.**

Basic operations

Playing a DVD VIDEO or CD disc

Now you can play a DVD VIDEO or a CD disc. First, let's enjoy simple playback according to following procedure.

To play a disc from the beginning

Remote Control Front Panel

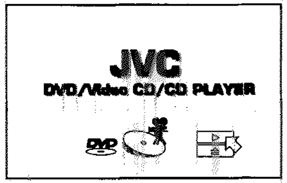
DVD Audio CD Video CD

Short cuts

Press [PLAY].

The unit starts playback from the beginning.

1 Use to move to [▷], then press ENTER.



■ The unit starts playback from the beginning.

Hints

When you play a Video CD disc with PBC function or DVD disc, the menu display may appear on the TV screen. In this case, you can operate some functions such as playback from the menu displayed on the TV screen.

For the operation using the menu of DVD, see page 26.

For the operation using the menu of Video CD, see page 27.

To adjusting the volume level

- **For TV**
  Press [+] to increase the volume, and [−] to decrease the volume.
- **For a JVC amplifier**
  Press [+] to increase the volume, and [−] to decrease the volume.
- **For other amplifier or receiver**
  Adjust the volume level of the connected amplifier or receiver. See the instructions of the amplifier or receiver.
- **For headphones**
  To increase the volume, turn to the right. To decrease the volume, turn to the left.

To stop playback completely

Remote Control Front Panel

DVD Audio CD Video CD

1 Press [STOP].

■ The unit stops playback.

Remote Control Front Panel

To stop playback temporarily

DVD Audio CD Video CD

1 Press PAUSE.

■ The unit pauses playback. To continue playback, press PLAY.

Remote Control Front Panel

To advance or reverse play rapidly while monitoring

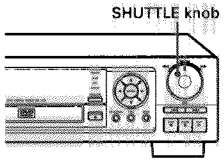
DVD Audio CD Video CD

■ During playback

1 Press SLOW+ or SLOW−.

Press SLOW+ to advance playback rapidly, and SLOW− to reverse playback rapidly. Each time you press the button, advance playback or reverse playback speed increases. To return to the normal playback, press PLAY.

You can also advance or reverse play rapidly with the SHUTTLE knob on the front panel. To advance play rapidly, turn the shuttle knob to the right and hold, and to reverse play rapidly, turn the shuttle knob to the left and hold. When you release the shuttle knob, the unit returns to normal playback. The playback speed changes according to the amount you turn the shuttle knob.



Hints

Keep pressing NEXT or PREVIOUS to advance or reverse play rapidly. When you release the button, the unit returns to normal playback.

Remote Control Front Panel

To locate the beginning of the scene or song

DVD Audio CD Video CD

■ During playback

1 Press NEXT or PREVIOUS.

Press PREVIOUS to locate the beginning of the current chapter, title, or track, and press NEXT to locate the beginning of the next chapter, title, or track.
The unit locates the beginning of the track when you play a Video CD disc without the PBC function or Audio CD disc. When you play a Video CD disc with the PBC function or DVD VIDEO disc, the unit may locate different place, but mostly it locates on the beginning of the title or chapter or track.

Resuming playback

The unit stores the position on a disc where you want to interrupt playback at, and resumes playback from that position later.

Remote Control

To store the point where you want to resume playback from [RESUME]

DVD Audio CD Video CD

■ During playback

1 Press RESUME.

The unit stores the current playback position of the disc, and the RESUME indicator on the front panel lights.

The last stored memory overrides the previous memory.

Hints

You can store the position on a disc where you want to interrupt playback at by pressing DVD⏻ instead of RESUME.

Remote Control

To resume playback from the stored point [RESUME]

DVD Audio CD Video CD

■ During stop mode

1 Press RESUME.

The unit resumes playback from the stored position.

Hints

The unit also resumes playback by pressing RESUME during standby mode.

NOTES

- **When you resume playback during playback of a Video CD disc with PBC function, the unit may resume playback from a point slightly earlier than the point you stored.**
- **To clear the memory**
  Take out the disc from the unit.

Summary of basic operations

The basic operations and buttons for basic operations are shown in table below:

To	Press
Turn on/off the unit	DVD ⏻/I
Play	PLAY ▷
Stop	STOP ■
Pause	PAUSE ❚❚
Advance or reverse play rapidly while monitoring	◄◄ SLOW- / ►► SLOW+ or turn the shuttle knob and hold.
Locate the beginning of a scene or song	◄◄ PREVIOUS / ►►❚ NEXT until it clicks.

To	Press
Turn on your TV	TV ⏻/I
Adjust the volume of your TV	+ TV VOLUME –
Move the cursor on the TV screen	◎
Decide the cursor position	ENTER

How to use numeric buttons

The numeric buttons are used to select a track or title number.

To use 1 to 10, +10 (described as "press 1 to 10, +10").

1. Set DVD TV SAT to DVD.
2. Select a desired track or title number.
   - **To select a number between 1 and 10**

     Press the corresponding button for the number.
   - **To select a number higher than 10**

     Use +10.

     Example :

To select 13	+10 → 3
To select 34	+10 → +10 → +10 → 4
To select 40	+10 → +10 → +10 → 10

To use 0 to 9 (usually used for time search and described as "press 0 to 9").

1. Set DVD TV SAT to DVD.
2. Select the time.

Example (for DVD VIDEO):

1 hour 20 minutes	1 → 2 → 0 → 0 → 0
3 minutes 20 seconds	0 → 0 → 3 → 2 → 0

Example (for Audio CD/Video CD):

3 minutes 20 seconds	0 → 3 → 2 → 0
65 minutes 30 seconds	6 → 5 → 3 → 0

Playing from specific position on a disc

You can play a disc from the selected track, title or chapter, or from the specified time.

Remote Control Front Panel

To locate a desired scene from the menu

DVD

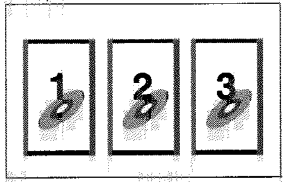
DVD discs generally have their own menus which show the disc contents. These menus contain various items such as titles of a movie, names of songs, or artist information, and display them on the TV screen. You can locate a desired scene by using the menu.

■ Insert the DVD disc.

1 Press MENU or TITLE.

The menu appears on the TV screen.

Example



2 Use ◎ to select a desired item, then press ENTER.

■ The unit starts playback of the selected item.

Hints

About MENU and TITLE

A DVD disc which contains more than one title may have a menu which lists the title. In this case, the menu appears on the TV screen by pressing TITLE. On the other hand, a DVD disc which contains only one title may have a menu. In this case, the menu appears on the TV screen by pressing MENU.

Hints

With some discs, you can select items by entering the corresponding number using the numeric buttons, which causes the unit to automatically start playback.

NOTES

- **When ⃠ appears on the TV screen by pressing TITLE in step 1:** The disc does not have a menu listing the titles.
- **When ⃠ appears on the TV screen by pressing MENU in step 1:** The disc does not have a menu.

Remote Control

To locate the desired scene from the menu of the Video CD with PBC

Video CD

Some Video CD discs are compatible with the PBC function. PBC is an abbreviation of "PlayBack Control." Video CD disc recorded on PBC have own menus such as the list of the songs of the disc and items recorded in a disc. You can also locate the specific scene by using the menu.

■ When the menu appears on the TV screen during playback with PBC

1 Use 1 to 10, +10 to select the desired number of the item.

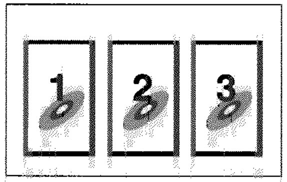
Playback starts from the selected item.

You can return to the menu by pressing RETURN.

When "NEXT" or "PREVIOUS" appears on the TV screen, the unit generally works as follows:

- succeeding to the next page by pressing NEXT.
- return to the previous page by pressing PREVIOUS.

Example:



*The method of the operation is different depending on the disc.

Hints

When you play a Video CD disc using the PBC function, "PBC" appears in the display window on the front panel. When the PBC function is not activated, press STOP, then press PLAY to activate the PBC function. You can also operate from the on-screen display as follows:

1. Press ON SCREEN.
2. Use ENTER to move to [PBC CALL], then press ENTER.

Hints

When you want to set the PBC function to off, press the numeric buttons to play a disc. See page 28.

Advanced operations

Remote Control

To locate a desired scene or track directly

DVD Audio CD Video CD

You can play the desired scene or track by specifying the title (for DVDs) or track (for CDs).

■ For DVD:	During stop mode
For Audio CD:	During playback or stop mode
For Video CD:	During playback without PBC function or stop mode

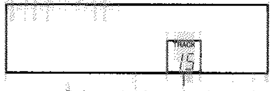
1 Use 1 to 10, +10 to select the desired title or track number.

The selected title or track number appears in the display window on the front panel.

Example:

To select title or track number 8:	Press 8.
To select title or track number 37:	Press +10, +10, +10, 7.

Display window



Selected title or track number

■ The unit begins playback from the selected title or track.

NOTES

- **When ⊘ appears on the TV screen.**
  The title or track you have selected is not contained in the disc.
- **This function does not work during Video CD playback with PBC function**

Remote Control Front Panel

To locate a desired track using NEXT or PREVIOUS

Audio CD Video CD

■ For Audio CD:	During playback or stop mode
For Video CD:	During playback without PBC function

1 Press NEXT or PREVIOUS.

- To skip to a succeeding track, press NEXT once or repeatedly until the desired track appears in the display.
- To skip to beginning of the current track, press PREVIOUS once.
- To skip to a preceding track, press PREVIOUS repeatedly until the desired track appears in the display.

Display window

Selected track number

NOTE

- **This function does not work during Video CD playback with PBC function**

Hints

You can display the desired title or track number on the TV screen. In this case, press ON SCREEN to display the on-screen display.

Remote Control

To locate a desired scene by specifying the chapter number [CHAP. SEARCH]

DVD

Each chapter is usually assigned a chapter number on DVD discs (except Karaoke discs). You can play a desired chapter by selecting the chapter number from the on-screen display.

■ During playback

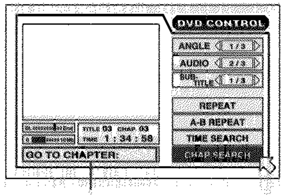
1 Press ON SCREEN.

The on-screen display appears on the TV screen.

2 Use ◎ to move ⇖ to [CHAP. SEARCH], then press ENTER.

<GO TO CHAPTER> appears in the message area.

The color of [CHAP. SEARCH] changes.


DVD CONTROL
ANGLE 1/3
AUDIO 2/3
SUB TITLE 1/3
REPEAT
A-B REPEAT
TIME SEARCH
CHAP.SEARCH
TITLE 03 CHAP. 03
TIME 1 : 34 : 58
GO TO CHAPTER:

Message area

3 Use 0 to 9 to select the desired chapter number, then press ENTER.

Selected chapter number appears in the message area.

Example:

To select chapter number 8: Press 8, ENTER.

To select chapter number 37: Press 3, 7, ENTER.

■ The unit begins playback from the selected chapter.

Hints

10 and +10 are not used in this function.

Advanced operations

NOTES

- **When the chapter number is incorrect in step 3:**
  Press 0 to erase the number previously selected, and select the desired number using the numeric buttons.
- **When ⃠ is displayed in the TV screen in step 3:**
  The chapter you have selected is not contained in the disc, or chapter search does not work on the disc.
- **To return to the regular display:**
  Press ON SCREEN.

Remote Control

To locate the desired scene or position by specifying the time [TIME SEARCH]

DVD Audio CD Video CD

You can play a disc from the the desired position by specifying the elapsed time from the beginning of the disc using the TIME SEARCH function.
Note that some DVD discs does not contains time information and you cannot use the TIME SEARCH function.

■ For DVD, Audio CD: During playback
For Video CD: During playback without PBC function

1 Press ON SCREEN.

The on-screen display appears on the TV screen.

2 Use ◎ to move ⇖ to [TIME SEARCH], then press ENTER.

<GO TO> appears in the message area.
The color of [TIME SEARCH] changes.

3 Use 0 to 9 to specify the time, then press ENTER.

Example 1 (for DVD):
To playback from the 1 hour point.

GO TO _ : :

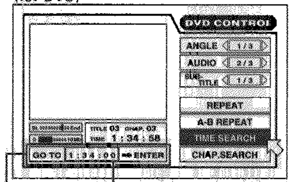
↓ Press 1.

GO TO 1 : _ :

↓

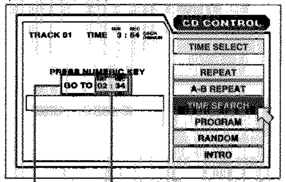
Press ENTER.

(for DVD)


DVD CONTROL
ANGLE 1/3
AUDIO 2/3
SUB TITLE 1/3
REPEAT
A-B REPEAT
TIME SEARCH
CHAP.SEARCH
TITLE 03 CHAP. 03
TIME 1 : 34 : 58
GO TO 1 : 34 : 00 ➡ENTER

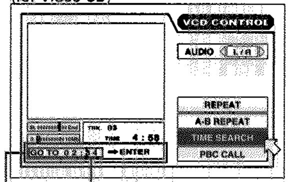
Message area Selected time

(for Audio CD)


CD CONTROL
TRACK 01 TIME 3 : 54
PRESS NUMERIC KEY
GO TO 02 : 34
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

Message area Selected time

(for Video CD)


VCD CONTROL
AUDIO L/R
REPEAT
A-B REPEAT
TIME SEARCH
PBC CALL
TRK 03
TIME 4 : 58
GO TO 0 2 : 3 4 ➡ENTER

Message area Selected time

Hints

10 and +10 are not used in this function.

Hints

You can specify the time in hour/minute/second for DVD discs, and in minute/second for Audio and Video CD discs.

English

Short cuts

After pressing 4, press ENTER.

You can input the time by pressing ENTER without pressing 0 twice to input the second value.

Example 2 (for DVD):
To playback from 2 hour 34 minutes:

GO TO _ : :
↓ Press 2.
GO TO 2 : _ :
↓ Press 3.
GO TO 2 : 3 _ :
↓ Press 4.
GO TO 2 : 3 4 : _
↓ Press 0.
GO TO 2 : 3 4 : 0
↓ Press 0.
GO TO 2 : 3 4 : 0 0
↓
Press ENTER

Example 3 (for Audio CD/Video CD):
To playback from 2 minutes 34 seconds.

GO TO _ :
↓
GO TO 0 _ :
↓
GO TO 02 : _
↓
GO TO 02 : 3 _
↓
GO TO 02 : 3 4
↓
Press ENTER

■ The unit starts playback from the selected time.

Advanced operations

NOTES

- **When you make a mistake in step 3:**
  Move the cursor to the incorrect value, then press the correct value to re-select the value.

  GO TO 2 : 3 5 : _
  ↓ Press «
  GO TO 2 : 3 5 :
  ↓ Press 4.
  GO TO 2 : 3 4 : _

- **When ⃠ appears on the TV screen in step 2:**
  The time you have selected is not contained on the disc, or the time search function does not work on the disc. When you play a Video CD disc with the PBC function, there are some sections where the time search function does not work.
- **To return to the regular display:**
  Press ON SCREEN.
- **The time search function does not work during Video CD playback with the PBC function**

Remote Control Front Panel

To locate a desired scene by watching the opening scene digest display [DIGEST] DVD Video CD

The unit can display the opening scene of each title of DVD or each track of Video CD. You can select a desired title or track from the opening scenes displayed on the TV screen.

■ For DVD: During stop mode
For Video CD: During stop mode or playback without PBC function

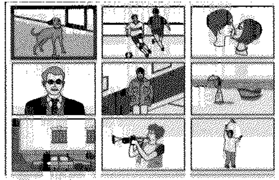
Hints

When you press DIGEST during DVD playback, the unit displays the opening scene of each chapter and you can select the desired chapter. In this case, opening scenes are displayed from chapter 1.

1 Press DIGEST.

The opening scene of each title or track appears on the TV screen.

Up to nine opening scenes are displayed.

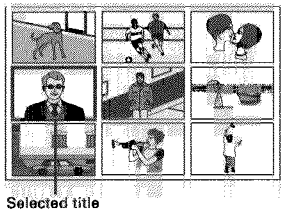


Hints

- When the selected title or track is in the lower right-hand corner of the screen, press » to check the additional scenes.
- When the selected title or track is in the upper left-hand corner of the screen, press « to return to previous scenes.

2 Use ◎ to select the desired title.

When the disc contains more than 9 titles or tracks, the digest screen have more than one page. In this case, pressing NEXT turns to the next page, while pressing PREVIOUS returns to the previous page.



3 Press ENTER.

■ The unit begins playback from the selected title or track.

NOTES

- **With some discs, depending on the contents, it may take some time until all the scenes appear on the screen.**

Playing in slow-motion

The unit can display a list of the still pictures, and playback a disc in slow-motion. You can view video in more detail by using these functions.

Remote Control Front Panel

To display still pictures [STROBE]

DVD Video CD

Hints

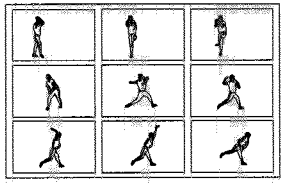
During this function, when you press [PAUSE], the next nine still pictures appear on the TV screen and playback pauses. When you press [PLAY], nine still pictures continuously appear on the TV screen.

■ During playback

1 Press [PAUSE] at the point you want to view as a continuous photograph.

2 Press and hold [PAUSE] for more than 1 second.

Nine still pictures appear on the TV screen and playback pauses.



To cancel strobe play

Press and hold [PAUSE] for more than 1 second.

Remote Control Front Panel

To playback in slow-motion [SLOW]

DVD Video CD

Hints

You can enjoy advancing the picture frame-by-frame by pressing [PAUSE] during pause. Each time you press [PAUSE], the picture advances one frame.

■ During playback

1 Press [PAUSE], then press [SLOW+] or [SLOW−].

To play in slow-motion, press [SLOW+], and to play reverse slow-motion (DVD only), press [SLOW−]. First, the unit plays the slowest speed, and each time you press these buttons, the playback speed increases. To return to normal playback, press [PLAY].

To pause slow-motion play

Press [PAUSE].

Hints

You can also use the SHUTTLE knob for slow-motion play.

1. Press [PAUSE] to pause playback.
2. Turn the SHUTTLE knob to the right to play in slow-motion. Turn the SHUTTLE knob to the left to play in slow-motion in reverse (DVD only). You can adjust the playback speed by turning the SHUTTLE knob.

NOTES

- **To cancel slow-motion play**
  Press [PLAY].
- **The sound is muted during slow-motion play.**
- **Reverse slow-motion playback is not possible for a Video CD.**

Playing a scene close-up

The unit can zoom in a part of the scene. You can view any part of the scene close-up.

Remote Control

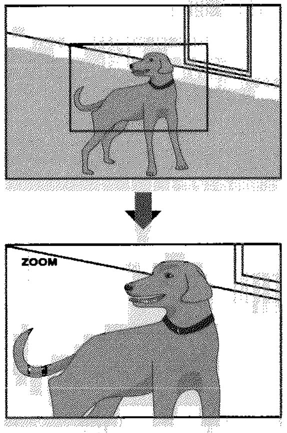
To playback a scene close-up [ZOOM]

DVD Video CD

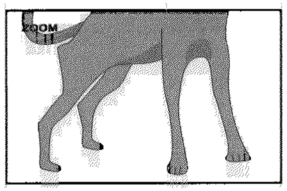
■ During playback or pause

1 Press [ZOOM].

[ZOOM] appears on the TV screen. The unit zooms in to the center part of the scene to produce a double-sized image.



2 Use [cursor] to move the zoomed-in scene.



To pause zoom play

Press [PAUSE].
To resume zoom play, press [PLAY].

NOTE

- **To cancel zoom play**
  Press [ZOOM].
- **During Zoom play, the picture may be garbled or noizy.**

English

Changing the track order

You can play tracks on a Audio CD or Video CD in the desired order or in random order.

Remote Control

To playback in the desired order [PROGRAM]

Audio CD Video CD

By creating a program, you can enjoy listening to your favorite tracks in any order.

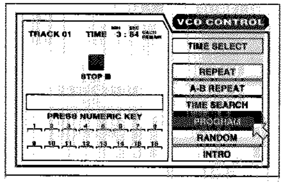
■ During stop mode only

1 Press ON SCREEN.

The on-screen display appears on the TV screen.

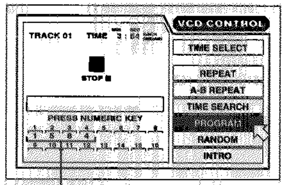
2 Use ◎ to move ↖ to [PROGRAM] and press ENTER.

The color of "PROGRAM" changes.


TRACK 01 TIME 3:54
STOP ■
PRESS NUMERIC KEY
VCD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

3 Select the tracks in the desired order using 1 to 10, +10.

Up to 16 tracks can be programmed. You may select the same track more than once.


TRACK 01 TIME 3:54
STOP ■
PRESS NUMERIC KEY
VCD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

Selected track number

4 Press PLAY to start program play.

Hints

When all of the programmed tracks have finished playback, the unit stops but the program remains.

Hints

You can program tracks during playback.

NOTES

- **When you make a mistake in step 3:**
  Press CANCEL. The last track programmed is erased.
- **To clear program play**
  Press STOP to stop playback, then press STOP again. All the programmed tracks are erased.
- **To quit program play**
  Move ↖ to [PROGRAM] in the display using ◎ and press ENTER.
  "PROGRAM" returns to its original color.

Advanced operations

Remote Control Front Panel

To playback tracks in random order [RANDOM]

Audio CD Video CD

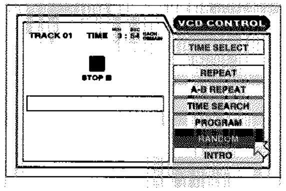
The unit can play tracks in random order.

■ During stop mode

1 Press ON SCREEN.

The on-screen display appears on the TV screen.

2 Use ◎ to move ↖ to [RANDOM].


TRACK 01 TIME 3:54
STOP ■
VCD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

3 Press ENTER.

The color of "RANDOM" changes.

■ Random play begins.

Hints

- When all tracks have been played once, random play ends.
- The same track will not be played back more than once during random play.

NOTE

- **To stop random play**
  Press STOP.
- **To quit random play (Audio CD only)**
  Move ↖ to [RANDOM], then press ENTER. "RANDOM" returns its original color.

Repeat playback

The unit can repeat playback of the current title, chapter (for DVD) or all tracks or the current tracks (for Audio CD/Video CD) and you can also select the desired part for repeat playback.

Remote Control Front Panel

To repeat a title, chapter, or current or all track [REPEAT]

DVD Audio CD Video CD

■ For DVD, Audio CD: During Playback
For Video CD: During playback without PBC funciton

1 Press ON SCREEN.

The on-screen display appears on the TV screen.

2 Use ◎ to move ↖ to [REPEAT], then press ENTER.

Each time you press ENTER, the repeat mode changes as follows:

(for DVD)

T. REPEAT (title repeat)
↓
C. REPEAT (chapter repeat)
↓
No Indication (off)

The current title or chapter will be repeated.

(for Audio CD/Video CD)

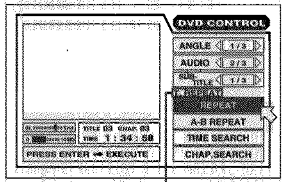
REPEAT ALL
↓
REPEAT 1
↓
No Indication (off)

REPEAT ALL:
All the tracks are played repeatedly.

REPEAT 1:
The current track is played repeatedly.

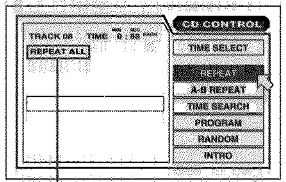
The current track or all tracks is/are played repeatedly.

(for DVD)


DVD CONTROL
ANGLE 1/3
AUDIO 2/3
SUB-TITLE 1/3
T. REPEAT
REPEAT
A-B REPEAT
TIME SEARCH
CHAP.SEARCH
TITLE 03 CHAP. 03
TIME 1 : 34 : 58
PRESS ENTER → EXECUTE

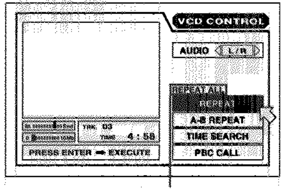
Selected repeat mode appears on the TV screen.

(for Audio CD)


CD CONTROL
TRACK 08 TIME 0 : 58
REPEAT ALL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

Selected repeat mode

(for Video CD)


VCD CONTROL
AUDIO L/R
REPEAT ALL
REPEAT
A-B REPEAT
TIME SEARCH
PBC CALL
TRK 03
TIME 4 : 58
PRESS ENTER → EXECUTE

Selected repeat mode

NOTES

- **Repeat play function cannot be used during Video CD playback with PBC function. To use this function, press STOP to stop playback and then specify any track number by using the numeric buttons.**
- **To turn off the on-screen display**
  Press ON SCREEN.
- **To stop repeat playback during Audio CD or Video CD playback**
  Press STOP. The unit stops but remains in repeat play mode.
- **To quit repeat playback**
  Move ↖ to [REPEAT] in the on-screen display and press ENTER repeatedly until [REPEAT] returns to its original color.
  You can also cancel repeat playback of DVD by pressing STOP.
- **If ⊘ appears when pressing ENTER in step 2 during DVD playback**
  You cannot repeat the title or chapter because of the disc contents.

Remote Control Front Panel

To repeat a desired part [A-B REPEAT]

DVD Audio CD Video CD

■ For DVD, Audio CD: During Playback
For Video CD: During playback without PBC function

1 Press ON SCREEN.

The on-screen display appears on the TV screen.

2 Use ◎ to move ↖ to [A-B REPEAT], then press ENTER at the beginning of the part you want to repeat (point A).

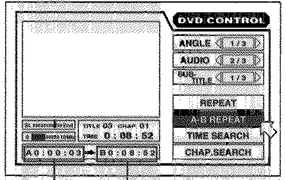
The color of "A-B REPEAT" changes.

3 Press ENTER at the end of the part you want to repeat (point B).

The unit locates "A" and starts repeat playback between "A" and "B."

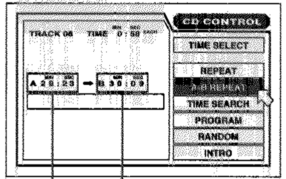
■ The selected portion will be repeated.

(for DVD)


DVD CONTROL
ANGLE 1/3
AUDIO 2/3
SUB-TITLE 1/3
REPEAT
A-B REPEAT
TIME SEARCH
CHAP.SEARCH
TITLE 03 CHAP. 01
TIME 0 : 08 : 52
A 0 : 00 : 03 → B 0 : 08 : 52

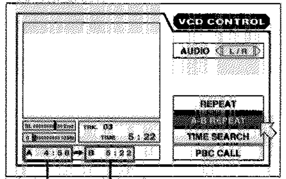
Point A Point B

(for Audio CD)


CD CONTROL
TRACK 08 TIME 0 : 58
A 2 8 : 2 3 → B 3 8 : 0 9
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

Point A Point B

(for Video CD)


VCD CONTROL
AUDIO L/R
REPEAT
A-B REPEAT
TIME SEARCH
PBC CALL
TRK 03
TIME 5 : 22
A 4 : 58 → B 5 : 22

Point A Point B

NOTES

- **To turn off the on screen display**
  Press ON SCREEN.
- **To quit A-B repeat playback**
  Move ↖ to [A-B REPEAT] in the on screen display and press ENTER until [A-B REPEAT] returns to its original color. A-B repeat mode cancels.
- **To stop A-B repeat playback**
  Press STOP.
- **If ⊘ appears when pressing ENTER in step 2 during DVD playback**
  You cannot repeat the selected portion because of the disc contents.

Sampling all tracks

You can sample the tracks of an Audio CD or Video CD by playing back to a short segment of each track in order. The unit plays the first 10 seconds of each track.

Remote Control Front Panel

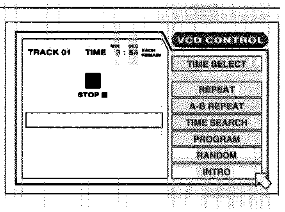
To playback only the beginning of each track [INTRO] Audio CD Video CD

■ During stop mode

1 Press ON SCREEN.

The on-screen display appears on the TV screen.

2 Use ◎ to move ⇖ to [INTRO].


TRACK 01
TIME 3 : 54
STOP ■
VCD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

3 Press ENTER.

- ■ The first 10 seconds of each track on a disc are played back in numerical order from the first track.

Hints

When all tracks have been played once, INTRO scan quits.

NOTE

- **To quit INTRO scan (Audio CD only)**
  Move ⇖ to [INTRO], then press ENTER. "INTRO" returns to its original color.
- **To stop INTRO scan**
  Press STOP.

Viewing from multiple angles

You can enjoy a variety of scene angles if the DVD disc contains "multi angle" parts, where multiple cameras were used to shoot the same scene from different angles. You can select one of these viewing angles from the normal screen or on-screen display.

Remote Control

To select a scene angle from the normal screen [ANGLE] DVD

■ During playback

1 Press ANGLE.

2 Press ANGLE or ◎ to select the desired angle.

Each time you press ANGLE or ◎, the scene changes.

Remote Control Front Panel

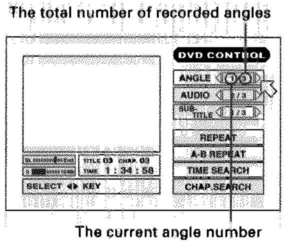
To select a scene angle from the on-screen display [ANGLE] DVD

■ During playback

1 Press ON SCREEN.

The on-screen display appears on the TV screen.

2 Use ◎ to move ⇖ to [ANGLE].


The total number of recorded angles
DVD CONTROL
ANGLE 1 / 3
AUDIO / 3
SUB-TITLE / 3
REPEAT
A-B REPEAT
TIME SEARCH
CHAP.SEARCH
TITLE 03 CHAP. 03
TIME 1 : 34 : 58
SELECT ◀▶ KEY
The current angle number

3 Use ◎ to select the desired angle number.

Example:
1 / 3
↓
2 / 3
↓
3 / 3

NOTES

- **To turn off the on-screen display**
  Press ON SCREEN.
- **When ⃠ appears on the TV screen**
  The current scene is not recorded from multiple angles.

Remote Control

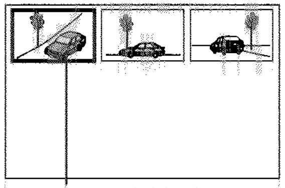
To select a scene angle from the angle list display [ANGLE]

DVD

■ During playback

1 Press and hold ANGLE for more than 1 second.

Up to nine angle scenes recorded on a disc appear on the TV screen.


The selected scene angle

2 Use ◎ to select desired angle.

3 Press ENTER.

■ The selected angle appears on the TV screen.

NOTE

- **When ⊘ appears on the TV screen in step 1:**
  The current scene is not recorded from multiple angles.

Changing the language and sound

You can choose the subtitle or audio language from the languages included on a disc and select the sound from a variety of sounds included on a DVD disc.

Remote Control Front Panel

Short cuts

Press SUBTITLE and select the desired subtitle by using ◎.

Hints

You can turn the subtitle ON/OFF by pressing SUBTITLE. Each time you press SUBTITLE, the ON/OFF status is switched. When the subtitle function is ON, the subtitle language appears on the TV screen.

Hints

When you select the language, if the abbreviation appears on the TV screen, select the abbreviation corresponding to the desired language. For details on abbreviations, see "Table of languages and their abbreviations" at the end of this instructions.

To select the subtitle language [SUBTITLE]

DVD

■ During playback

1 Press ON SCREEN.

The on-screen display appears on the TV screen.

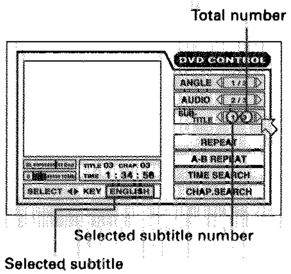
2 Use ◎ to move ↖ to [SUBTITLE].

3 Use ◎ to select the desired subtitle.

Each time you use ◎, the subtitle changes.

Example:

1/3 ENGLISH
↓
2/3 FRENCH
↓
3/3 SPANISH
↓
–/3 (off)


Total number
DVD CONTROL
ANGLE 1/3
AUDIO 2/3
SUB. TITLE 1/3
REPEAT
A-B REPEAT
TIME SEARCH
CHAP.SEARCH
TITLE 03 CHAP. 03
TIME 1 : 34 : 56
SELECT ◀▶ KEY ENGLISH
Selected subtitle number
Selected subtitle

NOTE

- **When ⊘ appears on the TV screen:**
  You cannot select the subtitle.

English

Remote Control Front Panel

To change the audio language or sound selection [AUDIO]

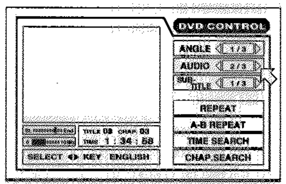
DVD

■ During playback

1 Press ON SCREEN.

The on-screen display appears on the TV screen.

2 Use ◎ to move ↖ to [AUDIO].

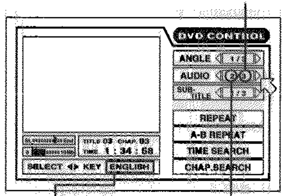

DVD CONTROL
ANGLE 1/3
AUDIO 2/3
SUBTITLE 1/3
REPEAT
A-B REPEAT
TIME SEARCH
CHAP.SEARCH
TITLE 03 CHAP. 03
TIME 1 : 34 : 58
SELECT KEY ENGLISH

3 Use ◎ to select the desired audio language or sound.

Each time you use ◎, the audio language or sound changes.

Example:

1/3 ENGLISH
2/3 FRENCH
3/3 SPANISH


DVD CONTROL
ANGLE 1/3
AUDIO 2/3
SUBTITLE 1/3
REPEAT
A-B REPEAT
TIME SEARCH
CHAP.SEARCH
TITLE 03 CHAP. 03
TIME 1 : 34 : 58
SELECT KEY ENGLISH

Total number

Selected audio number

Selected audio language

Advanced operations

NOTE

- **When ⃠ appears on the TV screen:**
  You cannot select the audio or sound.

Remote Control Front Panel

To change the audio channel [AUDIO]

Video CD

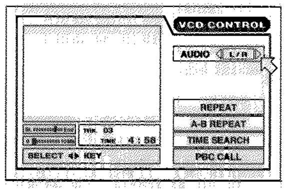
In some karaoke Video CDs, one of the audio channels includes a vocal while the other does not. With such discs, you can choose to enjoy karaoke without the vocal or with the vocal by selecting the audio channel to be played back.

■ During playback

1 Press ON SCREEN.

The on-screen display appears on the TV screen.

2 Use ◎ to move ↖ to [AUDIO].

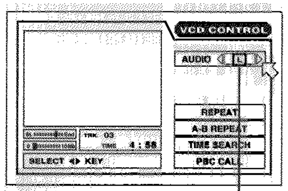

VCD CONTROL
AUDIO L/R
REPEAT
A-B REPEAT
TIME SEARCH
PBC CALL
TRK 03
TIME 4 : 58
SELECT KEY

3 Select the audio channel(s) to be played back using ◎.

L/R: You hear normal stereo playback.

L: You hear the L (Left) channel signal played back from both the left and right speakers.

R: You hear the R (Right) channel signal played back from both the left and right speakers.


VCD CONTROL
AUDIO L
REPEAT
A-B REPEAT
TIME SEARCH
PBC CALL
TRK 03
TIME 4 : 58
SELECT KEY

Selected audio channel

NOTE

- **To turn off the on-screen display**
  Press ON SCREEN.

Adjusting the picture to suit preferences

You can adjust the picture quality depending on the disc contents.

Remote Control Front Panel

To adjust the picture quality [VFP]

DVD Video CD

■ During playback

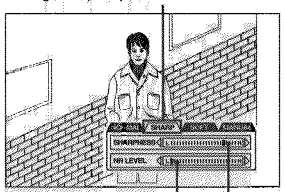
1 Press VFP or VIDEO FINE PROCESSOR on the front panel.

2 Within 10 seconds, select the desired picture quality by pressing VFP or VIDEO FINE PROCESSOR on the front panel.

Each time you press the button, the picture quality changes as follows:

NORMAL → **SHARP** → **SOFT** → **MANUAL** → **NORMAL**

The selected picture quality tab lights up in yellow.



Adjusting bar

Hints

If you select [MANUAL], you can adjust the level of picture sharpness and noise reduction.

1. Use ◎ to select SHARPNESS or NR LEVEL.
2. Use ◎ to adjust the level.
   Toward L: Reduce the effect.
   Toward H: Enhance the effect.

NOTES

- To turn off the VFP screen, press ENTER.
- The VFP screen disappears if there are no operations for more than 10 seconds.

Adjusting the surround sound

You can select a simulated surround effect depending on the disc contents. If you connect the unit to your stereo system, you can enhance sound quality and produce a greater surround effect.

Remote Control Front Panel

To simulate a surround sound [3D PHONIC]

DVD Audio CD Video CD

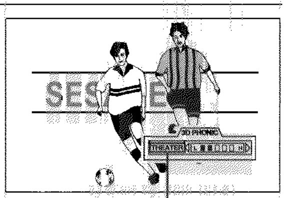
■ During playback

1 Press 3D PHONIC.

2 Within 10 seconds, select the desired effect mode by pressing 3D PHONIC.

Each time you press 3D PHONIC, the effect mode changes as follows:

ACTION* → **DRAMA** → **THEATER** → **OFF** → **ACTION***

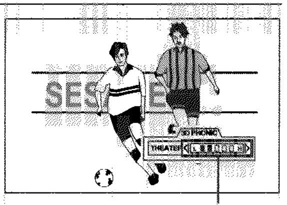


Selected effect mode

* When you play a DVD disc recorded in Dolby Digital which contains more than 3 channels, ACTION does not appears.

3 Press ◎ to adjust the effect level.

You can adjust the effect level in 5 level.
Toward L: Reduce the effect
Toward H: Enhance the effect



Effect level

Hints

To turn off the 3D PHONIC screen, press ENTER. The 3D PHONIC screen disappears if there are no operations for more than 10 seconds.

NOTES

- **The sound effect (3D PHONIC) works correctly when playing back discs recorded with Dolby Surround or Dolby Digital 5.1-CH format.**
  It also works when playing back discs other than those above, but does not provide the correct effect.
- **The sound effect is not possible, and will not work even if set when the unit outputs a DTS or Dolby Digital or MPEG bitstream signal from the DIGITAL OUT jack.**
- **The sound effect will not be set or operate, even if 3D PHONIC is pressed, on the sound of DVD discs recorded in Linear PCM.**
- **When you set the 3D PHONIC function to on, the DOWN MIX and COMPRESSION setting in the PREFERENCE 2 display are disabled.**

Checking the disc time

You can choose the displayed time mode for an audio or video CD disc in the display on the front panel and in the on-screen display.

Remote Control Front Panel

To select the time display mode [TIME SELECT] Audio CD

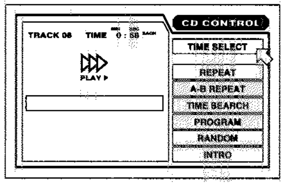
You can choose the time display mode for an Audio CDs in the display on the front panel and in the on-screen display.

■ During playback

1 Press .

The on-screen display appears on the TV screen.

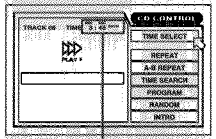
2 Use to move to [TIME SELECT].


TRACK 08
TIME 0:58
PLAY
CD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

3 Press .

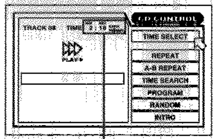
Each time you press , the time mode changes as follows:

EACH


CD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

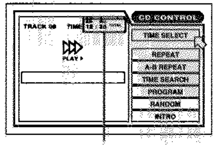
Elapsed time of the current track

EACH REMAIN


CD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

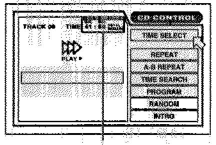
Remaining time of the current track

TOTAL


CD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

Total elapsed time of the disc

TOTAL REMAIN


CD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

Total remaining time of the disc

Hints

When you select the time mode during stop mode, the time mode changes as follows:

→ **EACH REMAIN**
Recorded time of the current track
↓
TOTAL (0:00)
↓
TOTAL REMAIN
Total remaining time of the disc
↓
EACH (0:00)

Remote Control Front Panel

To select the time display mode [TIME SELECT] Video CD

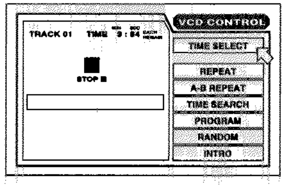
You can check the total and each time of a Video CD from the on-screen display on the TV screen or display window on the front panel.

■ During stop mode

1 Press .

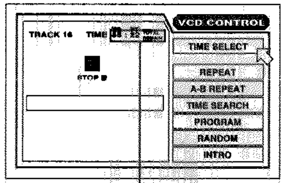
The on-screen display appears on the TV screen.

2 Use to move to [TIME SELECT].


TRACK 01
TIME 9:54
STOP
VCD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

3 Press until [TOTAL REMAIN] appears on the TV screen.

Total disc time appears on the TV screen.


TRACK 16
STOP
VCD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO

Total disc time of the disc

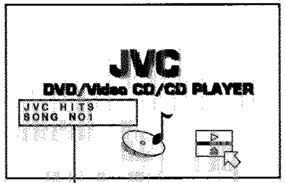
Hints

When you press repeatedly until [EACH REMAIN] appears on the TV screen, the recorded time of the displayed track appears on the TV screen. You can change the track by pressing or .

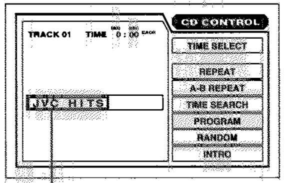
English

Information about CD TEXT

The unit is compatible with the CD TEXT function. CD TEXT discs have information, such as the album title, artist names, and track names. If the played disc is a CD TEXT disc, CD text data appears on the TV screen.


JVC
DVD/Video CD/CD PLAYER
JVC HITS
SONG NO1

CD TEXT


TRACK 01
TIME 0:00
CD CONTROL
TIME SELECT
REPEAT
A-B REPEAT
TIME SEARCH
PROGRAM
RANDOM
INTRO
JVC HITS

CD TEXT

Hints

CD TEXT data also appears in the display window. In this case, each time you press TITLE, CD TEXT data and time appears alternately.

What is CD TEXT?

CD TEXT, a new feature of audio CD discs, includes text information for such things as the album title, song titles, and artist names. in addition to audio information.

NOTES

- **The album title, artist names, or track names may not be displayed with some CD TEXT discs.**
- **When you insert a CD TEXT disc which contains many tracks, the time before the unit is ready for playback is longer than usual. The time is necessary for the unit to read the CD TEXT information, and this is not a malfunction.**

Advanced operations

Selecting preferences

You can set various preferences for playback via the "PREFERENCE" display.

Remote Control Front Panel

How to set preferences on the "PREFERENCE" display

1 Press STOP to stop the unit.

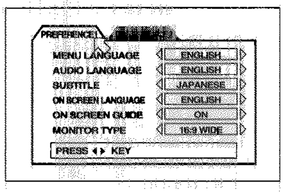
If the current disc is not a DVD disc, you have to remove the disc from the tray before setting up.

2 Press ON SCREEN.

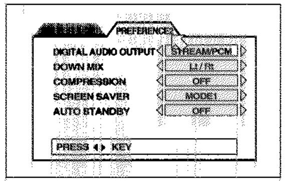
The "PREFERENCE" display appears on the TV screen.

The "PREFERENCE" display consists of two pages. To turn the page, move ↖ to the desired tab using ◎.

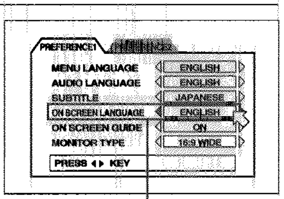
Preference 1


PREFERENCE1
MENU LANGUAGE
AUDIO LANGUAGE
SUBTITLE
ON SCREEN LANGUAGE
ON SCREEN GUIDE
MONITOR TYPE
ENGLISH
ENGLISH
JAPANESE
ENGLISH
ON
16:9 WIDE
PRESS ◀▶ KEY

Preference 2


PREFERENCE2
DIGITAL AUDIO OUTPUT
DOWN MIX
COMPRESSION
SCREEN SAVER
AUTO STANDBY
STREAM/PCM
Lt/Rt
OFF
MODE1
OFF
PRESS ◀▶ KEY

3 Move ↖ to select the item you want to set by using ◎.


PREFERENCE1
MENU LANGUAGE
AUDIO LANGUAGE
SUBTITLE
ON SCREEN LANGUAGE
ON SCREEN GUIDE
MONITOR TYPE
ENGLISH
ENGLISH
JAPANESE
ENGLISH
ON
16:9 WIDE
PRESS ◀▶ KEY

Selected item

4 Press ◎ to select the setting you want.

Hints

For details about each setting, see the following pages:

PREFERENCE 1
MENU LANGUAGE (51)
AUDIO LANGUAGE (51)
SUBTITLE (52)
ON SCREEN LANGUAGE (52)
ON SCREEN GUIDE (53)
MONITOR TYPE (53)
PREFERENCE 2
DIGITAL AUDIO OUTPUT (54)
DOWN MIX (55)
COMPRESSION (55)
SCREEN SAVER (56)
AUTO STANDBY (56)

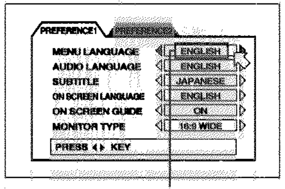
Hints

To return to the normal screen, press ON SCREEN.

To set the language and display preference items

PREFERENCE 1 can be set as follows:

MENU LANGUAGE


PREFERENCE1
PREFERENCE2
MENU LANGUAGE
AUDIO LANGUAGE
SUBTITLE
ON SCREEN LANGUAGE
ON SCREEN GUIDE
MONITOR TYPE
ENGLISH
ENGLISH
JAPANESE
ENGLISH
ON
16:9 WIDE
PRESS ◂▸ KEY

Selected language

You can select a default "display" language to be displayed if it is contained on the disc.

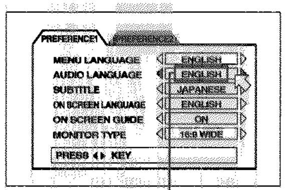
Each time you press », the language setting changes in the following order:

ENGLISH → SPANISH → FRENCH → CHINESE → GERMAN → ITALIAN → JAPANESE → language code from AA to ZU (See "Table of languages and their abbreviations" at the end of this instructions.)

Pressing « changes the language setting in the reverse order of the above.

* If the selected language is not recorded, the disc's default display language is displayed.

AUDIO LANGUAGE


PREFERENCE1
PREFERENCE2
MENU LANGUAGE
AUDIO LANGUAGE
SUBTITLE
ON SCREEN LANGUAGE
ON SCREEN GUIDE
MONITOR TYPE
ENGLISH
ENGLISH
JAPANESE
ENGLISH
ON
16:9 WIDE
PRESS ◂▸ KEY

Selected language

You can select the default audio language to be played if it is contained on the disc.

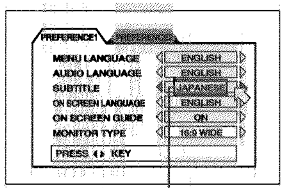
Each time you press », the language setting changes in the following order:

ENGLISH → SPANISH → FRENCH → CHINESE → GERMAN → ITALIAN → JAPANESE → language code from AA to ZU (See "Table of languages and their abbreviations" at the end of this instructions.)

Pressing « changes the language setting in the reverse order of the above.

* If the selected language is not recorded, the disc's default audio language is played.

SUBTITLE


PREFERENCE1
PREFERENCE2
MENU LANGUAGE
AUDIO LANGUAGE
SUBTITLE
ON SCREEN LANGUAGE
ON SCREEN GUIDE
MONITOR TYPE
ENGLISH
ENGLISH
JAPANESE
ENGLISH
ON
16:9 WIDE
PRESS ◂▸ KEY

Selected language

You can select the default subtitle language to be displayed when it is contained on a playback disc.

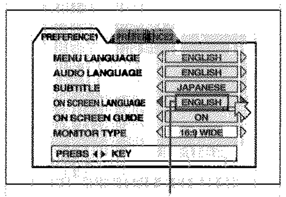
Each time you press », the language setting changes in the following order:

ENGLISH → SPANISH → FRENCH → CHINESE → GERMAN → ITALIAN → JAPANESE → language code from AA to ZU (See "Table of languages and their abbreviations" at the end of this instructions.)

Pressing « changes the language setting in the reverse order of the above.

* If the selected language is not recorded, the disc's default subtitle language is displayed.

ON SCREEN LANGUAGE


PREFERENCE1
PREFERENCE2
MENU LANGUAGE
AUDIO LANGUAGE
SUBTITLE
ON SCREEN LANGUAGE
ON SCREEN GUIDE
MONITOR TYPE
ENGLISH
ENGLISH
JAPANESE
ENGLISH
ON
16:9 WIDE
PRESS ◂▸ KEY

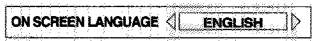
Selected language

You can select the on-screen display language to be displayed.

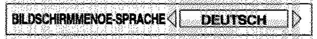
Each time you press ⊙, the language setting changes as follows:

ENGLISH
↓
DEUTSCH (German)
↓
FRANCAIS (French)

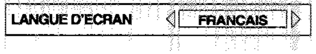
English


ON SCREEN LANGUAGE
ENGLISH

German

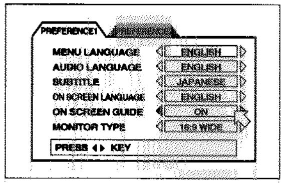

BILDSCHIRMMENOE-SPRACHE
DEUTSCH

French


LANGUE D'ECRAN
FRANCAIS

ON SCREEN GUIDE

The unit can display "on-screen guide" icons or characters on the picture, which show what is happening to the disc or the unit.



PREFERENCE1
MENU LANGUAGE ENGLISH
AUDIO LANGUAGE ENGLISH
SUBTITLE JAPANESE
ON SCREEN LANGUAGE ENGLISH
ON SCREEN GUIDE ON
MONITOR TYPE 16:9 WIDE
PRESS ◀▶ KEY

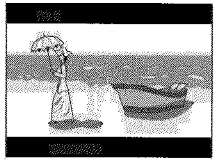
- **ON**
  The guide display turns on.
- **OFF**
  The guide display turns off.

Examples of "On-screen guide" icons or characters to be off:
🎥, ⊂⊃, ⌸

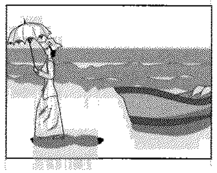
MONITOR TYPE

You can select the monitor type to match your TV when you playback DVD discs recorded for wide screen televisions.

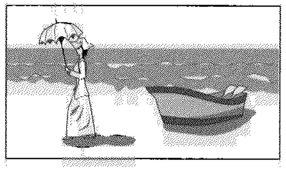
- **4:3 LB** ▭ (Letter Box Conversion)
  When you connect a normal TV to the unit.
  When you play a wide picture recorded on a DVD VIDEO, the picture is displayed with bands across the upper and lower portions of the screen.



- **4:3 PS** ▭ (Pan scan Conversion)
  When you connect a normal TV to the unit.
  When you play a wide picture recorded on a DVD VIDEO, a portion of the picture is automatically cut off from the left and right sides of the image. According to the disc, it may not be possible to playback on this mode. In this case, the picture is played back as in 4:3 LB ▭ mode.



- **16:9 WIDE** (Wide Television screen)
  When you connect a wide-screen TV to the unit.

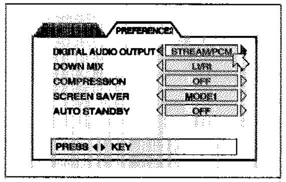


To set other preference items

PREFERENCE 2 can be set as follows:

DIGITAL AUDIO OUTPUT

To connect the unit's digital output to an external amplifier or receiver equipped with a digital input, this item must be set correctly.



PREFERENCE2
DIGITAL AUDIO OUTPUT STREAM/PCM
DOWN MIX LT/RT
COMPRESSION OFF
SCREEN SAVER MODE1
AUTO STANDBY OFF
PRESS ◀▶ KEY

- **PCM ONLY:**
  When you connect the DIGITAL OUT jack of the unit and the linear PCM digital input of a piece of audio equipment.
- **STREAM/PCM:**
  When you connect to the digital input of an amplifier with built-in DTS, Dolby Digital, and MPEG Audio decoder.
- **DOLBY DIGITAL/PCM:**
  When you connect to the digital input of a Dolby Digital decoder, or an amplifier with built-in Dolby Digital decoder

The following chart shows the relationship between types of playback discs and output signals.

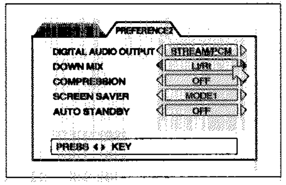
Playback discs	Output		
	STREAM/PCM	DOLBY DIGITAL/PCM	PCM ONLY
DVD with 48-kHz, 16-bit linear PCM	48-kHz, 16-bit linear PCM	←	←
DVD with 48-kHz, 20/24-bit linear PCM	48-kHz, 20-bit linear PCM	←	←
DVD with 96-kHz, linear PCM	No output	←	←
DVD with DTS	DTS bitstream	No output	←
DVD with Dolby Digital	Dolby Digital bitstream	←	48-kHz, 16-bit linear PCM
DVD with MPEG audio	MPEG bitstream	48-kHz, 16-bit linear PCM	←
Video CD	44.1-kHz, 16-bit linear PCM	←	←
Audio CD	44.1-kHz, 16-bit linear PCM	←	←
Audio CD with DTS	DTS bitstream	←	←

NOTES

- **The unit does not provide the DTS decoding function.**
- **When playing back an audio CD with DTS, only use a DTS decoder (or an amplifier with a built-in DTS decoder). Playing back such a disc outputs an incorrect signal from the analog output jacks, which may cause damage of speakers.**
  If you connect the analog outputs and digital outputs simultaneously, be sure to select the source of the amplifier correctly, or set the level control of the amplifier connected to the analog outputs to minimum.

DOWN MIX

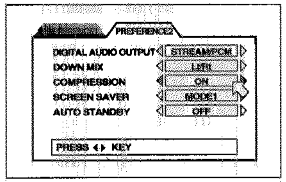
By setting DOWN MIX correctly, you can get the optimum stereo mix for your audio system from DVD discs recorded with Dolby Digital surround multichannel audio or MPEG Multichannel.


PREFERENCE2
DIGITAL AUDIO OUTPUT: STREAM/PCM
DOWN MIX: Lt/Rt
COMPRESSION: OFF
SCREEN SAVER: MODE1
AUTO STANDBY: OFF
PRESS ◄► KEY

- **Lt/Rt (Dolby Digital disc only):**
  You can monitor the unit's audio output signals via an amplifier with built-in Dolby Pro Logic Decoder.
- **Lo/Ro:**
  You can monitor the unit's audio output signals via a TV, an amplifier with no built-in Dolby Pro Logic Decoder, or the unit's headphone jack. Also for recording DVD audio output to a cassette tape, MD, etc.

COMPRESSION

You can compress the dynamic range of the sound if you need. Using this function, you can listen to sound at low volumes easily.


PREFERENCE2
DIGITAL AUDIO OUTPUT: STREAM/PCM
DOWN MIX: Lt/Rt
COMPRESSION: ON
SCREEN SAVER: MODE1
AUTO STANDBY: OFF
PRESS ◄► KEY

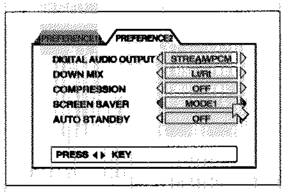
- **ON**
  Audio is played back with the dynamic range compressed.
- **OFF**
  Audio is played back as it was recorded.

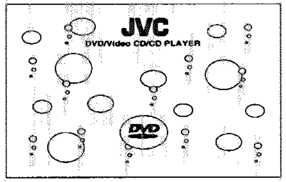
NOTES

- **The compression function works only when playing back a disc recorded with DOLBY DIGITAL 1 CH or 2CH. The setting is not effective for other discs.**
- **The compression function does not work when the 3D PHONIC function is activated.**
- **The downmix function does not work when the 3D PHONIC function is activated.**

SCREEN SAVER

A television monitor screen may be burned out if a static picture is displayed for a long time. To prevent this, the unit automatically activates the screen saver function if a static picture, such as an on-screen display or menu, is displayed for over 5 minutes.


PREFERENCE2
DIGITAL AUDIO OUTPUT: STREAM/PCM
DOWN MIX: Lt/Rt
COMPRESSION: OFF
SCREEN SAVER: MODE1
AUTO STANDBY: OFF
PRESS ◄► KEY



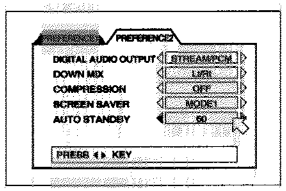
- **MODE 1**
  The picture is scrolled.
- **MODE 2**
  The picture is not scrolled.
- **DIMMER**
  The picture gets dark.
- **OFF**
  The screen saver function is off.

NOTES

- **When the screen saver mode is set to DIMMER, the display window on the front panel also gets dark (FL Dimmer). To return to normal brightness, set to another mode.**
- **The monitor screen of a projector or projection TV is easily to burned out if a static picture is displayed for a long time. Be careful not to allow the monitor screen to be burned out when you set the screen saver mode to OFF.**
- **The TV screen may be garbled when you set the screen saver mode to MODE 1. In this case, set to another mode.**

AUTO STANDBY

When the unit is in stop mode for more than 30 minutes or 60 minutes, the unit enters standby mode automatically.


PREFERENCE2
DIGITAL AUDIO OUTPUT: STREAM/PCM
DOWN MIX: Lt/Rt
COMPRESSION: OFF
SCREEN SAVER: MODE1
AUTO STANDBY: 60
PRESS ◄► KEY

- **60**
  Time is set to 60 minutes.
- **30**
  Time is set to 30 minutes.
- **OFF**
  The auto standby function is off.

Limiting playback by children

This function restricts playback of DVD discs which contain violent (and other) scenes according to the level set by the user. For example, if a movie which includes violent scenes supports the parental lock feature, such scenes which you do not want to let children view can be cut or replaced with other scenes.

Hints

"LEVEL 1" is the strictest level.

To set Parental Lock for the first time [PARENTAL LOCK]

Remote Control DVD

1 Press ENTER while holding down STOP.

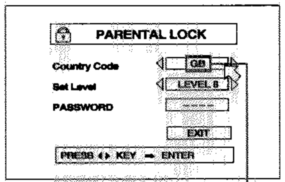
If the current disc is not a DVD disc, you have to remove the disc from the tray before setting up.

The Parental Lock on-screen display appears on the TV screen.

(The parental lock function is only operated with the remote control unit.)

2 Use ◎ to select country code and press ENTER.

(See "Country code list for parental lock" at the end of this instructions.)

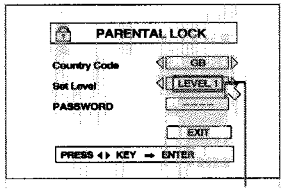


PARENTAL LOCK
Country Code GB
Set Level LEVEL 8
PASSWORD - - - -
EXIT
PRESS ◁▷ KEY → ENTER

Country code

3 Use ◎ to select the parental lock level.

Each time you press ▷, the parental level changes from LEVEL 1 to LEVEL 8.

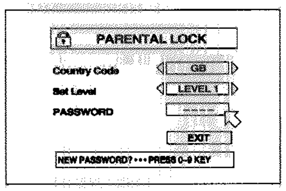


PARENTAL LOCK
Country Code GB
Set Level LEVEL 1
PASSWORD - - - -
EXIT
PRESS ◁▷ KEY → ENTER

Selected level

4 Press ENTER.

5 Enter your 4-digit password using 0 to 9 and press ENTER.



PARENTAL LOCK
Country Code GB
Set Level LEVEL 1
PASSWORD - - - -
EXIT
NEW PASSWORD? ••• PRESS 0-9 KEY

■ The parental level and password are set.

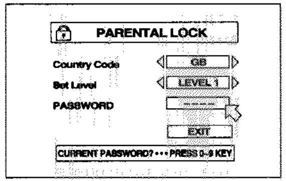
To change the settings [PARENTAL LOCK]

Remote Control DVD

1 Press ENTER while holding down STOP.

If the current disc is not a DVD disc, you have to remove the disc from the tray before setting up.

The Parental Lock on-screen display appears on the TV screen.

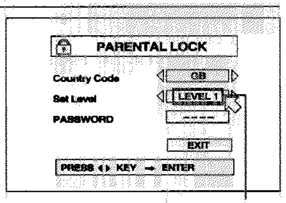


PARENTAL LOCK
Country Code GB
Set Level LEVEL 1
PASSWORD - - - -
EXIT
CURRENT PASSWORD? ••• PRESS 0-9 KEY

2 Enter your current 4-digit password using 0 to 9 and press ENTER.

If you enter the wrong password, <WRONG! RETRY......> appears on the TV screen, and you cannot go to next step.

3 Use ◎ to move ↖ to [Set Level], then use ◎ to select the parental lock level.



PARENTAL LOCK
Country Code GB
Set Level LEVEL 1
PASSWORD - - - -
EXIT
PRESS ◁▷ KEY → ENTER

Selected level

4 Press ENTER.

5 Enter your new 4-digit password using 0 to 9 and press ENTER.

■ The new setting is effective.

NOTES

- **When you enter the wrong password more than 3 times in step 2 above, ↖ moves to <EXIT> automatically and ◎ does not work.**
- **If you forget your password in step 2**
  Enter "8888."

Remote Control

To temporarily release the Parental lock [PARENTAL LOCK]

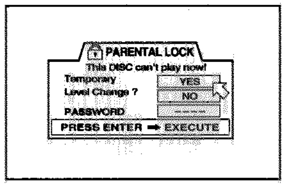
DVD

When you set the parental level strictly, some discs may not be played back at all. When you insert such a disc and try to play it, the Parental Lock on-screen display appears on the TV screen, and the unit will ask you whether you want the parental lock to be temporarily released or not.

1 Use the to select [YES] or [NO], then press .

If you select [YES], moves to the PASSWORD field.

When selecting [NO], press OPEN/CLOSE button to remove the disc.



PARENTAL LOCK

This DISC can't play now!

Temporary Level Change ? YES / NO

PASSWORD - - - -

PRESS ENTER ➡ EXECUTE

2 Enter your 4-digit password using 0 to 9.

If you enter the wrong password, "WRONG! RETRY..." appears on the TV screen, and you cannot go to next step.

■ The Parental lock is released, and the unit starts playback.

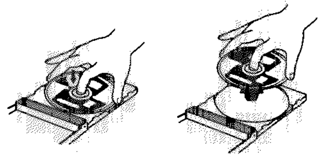
NOTE

- **When you enter the wrong password more than 3 times in step 2 above, moves to <NO> automatically and does not work.**

Care and handling of discs

How to handle discs

When handling a disc, do not touch the surface of the disc.
Since discs are made of plastic, they are easily damaged. If a disc gets dirty, dusty, scratched or warped, the images and sound will not be picked up correctly, and such a disc may cause the player to malfunction.



Even on label side

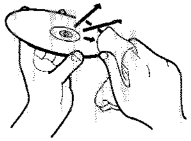
Do not damage the label side, stick paper to or use any adhesive on its surface.

Storage

Make sure that discs are kept in their cases. If discs are piled on top of one another without their protective cases, they can be damaged. Do not put discs in a location where they may be exposed to direct sunlight, or in a place where the humidity or temperature is high. Avoid leaving discs in your car!

Maintenance of discs

If there are fingerprints or other dirt adhering to a disc, wipe with a soft dry cloth, moving from the center outwards. If a disc is difficult to clean, wipe with a cloth moistened with water. Never use record cleaners, petrol, alcohol or any anti-static agents.



CAUTION

Sometimes during play noise or images may be garbled. This is sometimes due to the disc. (It may not be up to industry standards.)
These symptoms are caused by the discs, not by the malfunction of the unit.

Troubleshooting

What appears to be a malfunction may not always be serious. Please go through the following list before requesting service.

Symptom	Possible case	Remedy
Power does not come on.	Power plug is not inserted securely.	Plug in securely.
Remote control does not work.	Too far from the unit	More closer to the unit.
	The tip of the remote unit is not pointed in the right direction.	Point the infrared light- emitting window toward the remote sensor on the front panel.
	Batteries are exhausted.	Replace the batteries with new ones.
	Battery polarity is incorrect.	Take out the batteries and insert them again in the correct direction.
No picture is displayed on the monitor.	Connection of video cable is incorrect.	Connect the cable correctly.
	Input selection of TV is incorrect.	Select correctly.
	Disc is not playable.	Use a playable disc. (See page 11.)
Picture is noisy.	The unit is connected to a VCR directly and the copyguard function is activated.	Connect the unit so that the picture signal flows directly to the TV.
No audio is reproduced.	Connection to stereo system is incorrect.	Check the connections.
	Input selection of amplifier is incorrect.	Select correctly.
	The unit is connected only using DIGITAL OUT jack.	Connect the unit using AUDIO OUT jack also.
No sound from headphones.	PHONES LEVEL is too low.	Adjust the PHONES LEVEL.
Sound is distorted or noise is generated.	Disc is dirty.	Wipe the disc surface.
Picture is garbled.	The screen saver mode is set to MODE 1, and the screen saver function is activated.	Set the screen saver mode to the other mode.
Picture does not fit the television screen.	MONITOR TYPE is not correctly set.	Select monitor type correctly. (See page 53).
	Television is not correctly set.	Set the television correctly.
Operation is not possible	Microcomputer malfunctions due to lightning or static electricity.	Turn off the power and unplug the power cord, then connect the power cord again.
	Moisture condensation occurs by a sudden change of temperature or humidity.	Turn off the power, then turn it on a few hours later.

Specifications

General

Readable discs:	DVD VIDEO, Audio CD, Video CD
Video format:	PAL

Other

Power requirements:	AC 230V ~, 50Hz
Power consumption:	28 W (POWER ON), 2 W (STANDBY mode)
Mass:	4.5 kg (10.0 lbs)
Dimensions (W x H x D):	435 x 112 x 335 mm 17-3/16 x 4-7/16 x 13-1/4 inch

Video output

VIDEO OUT (pin jack):	1.0 Vp-p (75 ohms)	
S-VIDEO OUT (S jack):	Y Output:	1.0 Vp-p (75 ohms)
	C Output:	286 mVp-p (75 ohms)
Horizontal resolution:	500 Lines	
Signal to noise ratio:	65 dB	

Audio output

ANALOG OUT (pin jack):	2.0 Vrms (10 k ohms)	
DIGITAL OUT:	COAXIAL:	0.5 Vp-p
	OPTICAL:	−21 to −15 dBm (Peak)

Audio characteristics

Frequency response:	CD	(sampling frequency 44.1 kHz):	2 Hz to 20 kHz
	DVD	(sampling frequency 48 kHz):	2 Hz to 22 kHz
	DVD	(sampling frequency 96 kHz):	2 Hz to 44 kHz
Dynamic range:	16 bit: More than 98 dB 20 bit: More than 106 dB 24 bit: More than 106 dB		
Wow and flutter:	Unmeasurable (less than ± 0.002%)		
Total harmonic distortion:	Less than 0.002%		

Supplied accessories

Audio/video cable:	1
S-video cable:	1
Remote Control Unit:	1
R6P(SUM-3)/AA(15F) batteries:	2
Instructions:	1

* Specifications and appearance are subject to change without prior notice.

Appendix A: Table of languages and their abbreviations

When you select the subtitle language or sound, the languages shown below are displayed as abbreviations. To select the desired language, select the abbreviation corresponding the language you want to.

AA	Afar
AB	Abkhazian
AF	Afrikaans
AM	Ameharic
AR	Arabic
AS	Assamese
AY	Aymara
AZ	Azerbaijani
BA	Bashkir
BE	Byelorussian
BG	Bulgarian
BH	Bihari
BI	Bislama
BN	Bengali, Bangla
BO	Tibetan
BR	Breton
CA	Catalan
CO	Corsican
CS	Czech
CY	Welsh
DA	Danish
DZ	Bhutani
EL	Greek
EO	Esperanto
ET	Estonian
EU	Basque
FA	Persian
FI	Finnish
FJ	Fiji
FO	Faroese
FY	Frisian
GA	Irish
GD	Scots Gaelic
GL	Galician
GN	Guarani
GU	Gujarati
HA	Hausa
HI	Hindi
HR	Croatian
HU	Hungarian
HY	Armenian
IA	Interlingua
IE	Interlingue

IK	Inupiak
IN	Indonesian
IS	Icelandic
IW	Hebrew
JI	Yiddish
JW	Javanese
KA	Georgian
KK	Kazakh
KL	Greenlandic
KM	Cambodian
KN	Kannada
KO	Korean (KOR)
KS	Kashmiri
KU	Kurdish
KY	Kirghiz
LA	Latin
LN	Lingala
LO	Laothian
LT	Lithuanian
LV	Latvian, Lettish
MG	Malagasy
MI	Maori
MK	Macedonian
ML	Malayalam
MN	Mongolian
MO	Moldavian
MR	Marathi
MS	Malay (MAY)
MT	Maltese
MY	Burmese
NA	Nauru
NE	Nepali
NL	Dutch
NO	Norwegian
OC	Occitan
OM	(Afan) Oromo
OR	Oriya
PA	Panjabi
PL	Polish
PS	Pashto, Pushto
PT	Portuguese
QU	Quechua
RM	Rhaeto-Romance

RN	Kirundi
RO	Rumanian
RU	Russian
RW	Kinyarwanda
SA	Sanskrit
SD	Sindhi
SG	Sangho
SH	Serbo-Croatian
SI	Singhalese
SK	Slovak
SL	Slovenian
SM	Samoan
SN	Shona
SO	Somali
SQ	Albanian
SR	Serbian
SS	Siswati
ST	Sesotho
SU	Sundanese
SV	Swedish
SW	Swahili
TA	Tamil
TE	Telugu
TG	Tajik
TH	Thai
TI	Tigrinya
TK	Turkmen
TL	Tagalog
TN	Setswana
TO	Tonga
TR	Turkish
TS	Tsonga
TT	Tatar
TW	Twi
UK	Ukrainian
UR	Urdu
UZ	Uzbek
VI	Vietnamese
VO	Volapuk
WO	Wolof
XH	Xhosa
YO	Yoruba
ZU	Zulu

Appendix B: Country code list for parental lock

This list is used for the parental Lock operation. For details, see page 57.

AD	Andorra
AE	United Arab Emirates
AF	Afghanistan
AG	Antigua and Barbuda
AI	Anguilla
AL	Albania
AM	Armenia
AN	Netherlands Antilles
AO	Angola
AQ	Antarctica
AR	Argentina
AS	American Samoa
AT	Austria
AU	Australia
AW	Aruba
AZ	Azerbaijan
BA	Bosnia and Herzegovina
BB	Barbados
BD	Bangladesh
BE	Belgium
BF	Burkina Faso
BG	Bulgaria
BH	Bahrain
BI	Burundi
BJ	Benin
BM	Bermuda
BN	Brunei Darussalam
BO	Bolivia
BR	Brazil
BS	Bahamas
BT	Bhutan
BV	Bouvet Island
BW	Botswana
BY	Belarus
BZ	Belize
CA	Canada
CC	Cocos (Keeling) Islands
CF	Central African Republic
CG	Congo
CH	Switzerland
CI	Côte d'Ivoire
CK	Cook Islands
CL	Chile

CM	Cameroon
CN	China
CO	Colombia
CR	Costa Rica
CU	Cuba
CV	Cape Verde
CX	Christmas Island
CY	Cyprus
CZ	Czech Republic
DE	Germany
DJ	Djibouti
DK	Denmark
DM	Dominica
DO	Dominican Republic
DZ	Algeria
EC	Ecuador
EE	Estonia
EG	Egypt
EH	Western Sahara
ER	Eritrea
ES	Spain
ET	Ethiopia
FI	Finland
FJ	Fiji
FK	Falkland Islands (Malvinas)
FM	Micronesia (Federated States of)
FO	Faroe Islands
FR	France
FX	France, Metropolitan
GA	Gabon
GB	United Kingdom
GD	Grenada
GE	Georgia
GF	French Guiana
GH	Ghana
GI	Gibraltar
GL	Greenland
GM	Gambia
GN	Guinea
GP	Guadeloupe
GQ	Equatorial Guinea

GR	Greece
GS	South Georgia and the South Sandwich Islands
GT	Guatemala
GU	Guam
GW	Guinea-Bissau
GY	Guyana
HK	Hong Kong
HM	Heard Island and McDonald Islands
HN	Honduras
HR	Croatia
HT	Haiti
HU	Hungary
ID	Indonesia
IE	Ireland
IL	Israel
IN	India
IO	British Indian Ocean Territory
IQ	Iraq
IR	Iran (Islamic Republic of)
IS	Iceland
IT	Italy
JM	Jamaica
JO	Jordan
JP	Japan
KE	Kenya
KG	Kyrgyzstan
KH	Cambodia
KI	Kiribati
KM	Comoros
KN	Saint Kitts and Nevis
KP	Korea, Democratic People's Republic of
KR	Korea, Republic of
KW	Kuwait
KY	Cayman Islands
KZ	Kazakhstan
LA	Lao People's Democratic Republic
LB	Lebanon
LC	Saint Lucia

LI	Liechtenstein
LK	Sri Lanka
LR	Liberia
LS	Lesotho
LT	Lithuania
LU	Luxembourg
LV	Latvia
LY	Libyan Arab Jamahiriya
MA	Morocco
MC	Monaco
MD	Moldova, Republic of
MG	Madagascar
MH	Marshall Islands
ML	Mali
MM	Myanmar
MN	Mongolia
MO	Macau
MP	Northern Mariana Islands
MQ	Martinique
MR	Mauritania
MS	Montserrat
MT	Malta
MU	Mauritius
MV	Maldives
MW	Malawi
MX	Mexico
MY	Malaysia
MZ	Mozambique
NA	Namibia
NC	New Caledonia
NE	Niger
NF	Norfolk Island
NG	Nigeria
NI	Nicaragua
NL	Netherlands
NO	Norway
NP	Nepal
NR	Nauru
NU	Niue
NZ	New Zealand
OM	Oman
PA	Panama

PE	Peru
PF	French Polynesia
PG	Papua New Guinea
PH	Philippines
PK	Pakistan
PL	Poland
PM	Saint Pierre and Miquelon
PN	Pitcairn
PR	Puerto Rico
PT	Portugal
PW	Palau
PY	Paraguay
QA	Qatar
RE	Réunion
RO	Romania
RU	Russian Federation
RW	Rwanda
SA	Saudi Arabia
SB	Solomon Islands
SC	Seychelles
SD	Sudan
SE	Sweden
SG	Singapore
SH	Saint Helena
SI	Slovenia
SJ	Svalbard and Jan Mayen
SK	Slovakia
SL	Sierra Leone
SM	San Marino
SN	Senegal
SO	Somalia
SR	Suriname
ST	Sao Tome and Principe
SV	El Salvador
SY	Syrian Arab Republic
SZ	Swaziland
TC	Turks and Caicos Islands
TD	Chad
TF	French Southern Territories
TG	Togo
TH	Thailand

TJ	Tajikistan
TK	Tokelau
TM	Turkmenistan
TN	Tunisia
TO	Tonga
TP	East Timor
TR	Turkey
TT	Trinidad and Tobago
TV	Tuvalu
TW	Taiwan, Province of China
TZ	Tanzania, United Republic of
UA	Ukraine
UG	Uganda
UM	United States Minor Outlying Islands
US	United States
UY	Uruguay
UZ	Uzbekistan
VA	Vatican City State (Holy See)
VC	Saint Vincent and the Grenadines
VE	Venezuela
VG	Virgin Islands (British)
VI	Virgin Islands (U.S.)
VN	Vietnam
VU	Vanuatu
WF	Wallis and Futuna Islands
WS	Samoa
YE	Yemen
YT	Mayotte
YU	Yugoslavia
ZA	South Africa
ZM	Zambia
ZR	Zaire
ZW	Zimbabwe

-MEMO-

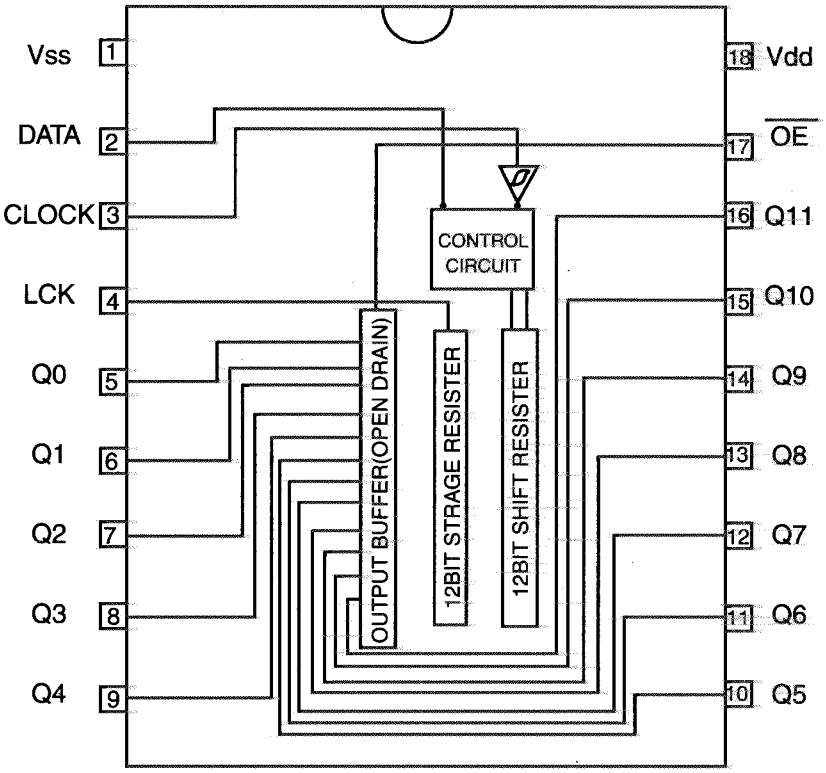
Description of major ICs

■AN8825NFHQ(IC101):FRONT END PROCESSOR

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	LDONB	I	Laser ON signal input (CD)	51	VCC5	-	Power supply 5
2	LDONA	I	Laser ON signal input (DVD)	52	IDGT	I	Gate signal input for RAM of data slice address section
3	LPCOB	O	Laser drive signal output(CD)				
4	LPC2	I	Laser pin input(CD)	53	DTRD	I	Data slice,Data read signal input for RAM
5	LPCOA	O	Laser drive signal output(DVD)	54	CAPA	I	Data slice address signal input for RAM
6	LPC1	I	Laser pin input(DVD)	55	VCC4	-	Power supply 4
7	TGBAL	O	Tangential phase balance control	56	DSLFLT		Constant filter terminal when data sliced
8	POFLT		Truck detection threshold level	57	ITD		Ripple removal filter terminal
9	PTH		Truck detection threshold level	58	VCOIN	I	PLL VCO input terminal
10	TBAL	O	Tracking balance control	59	PLFLT		PLL high region filter terminal
11	TG	O	Tangential phase error signal output	60	PLFLT2		PLL low region filter terminal
12	FBAL	O	Focus balance control	61	PCPO		PLL phase gain setting terminal
13	FEOUT	O	Focus error signal output	62	FCPO		PLL frequency gain setting terminal
14	VREFL	O	VREFL voltage output	63	GND4	-	Connect to GND 4
15	VREFH	O	VREFH voltage output	64	FUPON	I	PLL frequency control input
16	HDTYP	I	Input switch terminal of PD signal	65	VREF5	O	VREF 5 voltage output
17	XTRON	I	Tracking off hold input	66	JITOUT	O	Jitter detection signal output
18	PULIN		DSL.PLL drawing mode switch	67	FC		FC control for filter
19	SEN	I	Serial data input terminal(SEN)	68	BOOST		Boost control for filter
20	SCK	I	Serial data input terminal(SCK)	69	OFTR	O	OFTR output terminal
21	STD1	I	Serial data input terminal(STDI)	70	BDO	O	BDO output terminal
22	STANBY	O	Standby mode control terminal	71	RFENV	O	RF envelope output
23	TIIP			72	BOTTOM	O	Bottom envelope detection output
24	RSCL		Standard current source	73	PEAK	O	Peak envelope detection output
25	TIIN			74	AGCG		AGC amp.gain control terminal
26	IBAL			75	AGCO		AGC amp.level control terminal
27	TIOUT			76	VCC2	-	Power supply 2
28	TEOUT	O	Tracking error signal output	77	VPTOFT		OFTR detection level setting
29	TKCFLT		Track count detection filter	78	VPTBD0		BDO detection level setting
30	TKCNT	O	Track count output	79	TESTSQ	I	TEST signal input terminal
31	MMPW		Mnaural/Multi control for BDO,OFTR	80	DCFLT		Capacitor connect terminal for RF amp.filter
32	DOF		Data slice offset adjustment	81	RFINP	I	RF signal forward input terminal
33	GND1	-	Connect to GND	82	RFINN	I	RF signal reversing input terminal
34	VREF1	O	VREF1 voltage output	83	RFON	O	All RF addition reversing output
35	VREF3	O	VREF3 voltage output	84	RFOP	O	All RF addition forward output
36	DFLTON	O	Filter amp.reversing output	85	VREF2	O	VREF 2 voltage output terminal
37	DFLTOP	O	Filter amp.forward output	86	GND2	-	Connect to GND 2
38	DSLIP	I	Data slice forward input	87	RFAS2	O	All addition signal output
39	DSLIN	I	Data slice reversing input	88	RFAS1		Addition signal of internal division into four
40	GND3	-	Connect to GND				
41	DSL0	O	Data slice single data output	89	VREF4	O	VREF 4 voltage output terminal
42	VCK8	O	Output of PLL single division CLK into eight	90	VCC1	-	Power supply 1
43	VCC3	-	Power supply 3	91	VIN8	I	3 beam sub input terminal2 (CD)
44	DTMONP	O	Edge signal monitor output	92	VIN7	I	3 beam sub input terminal1 (CD)
45	DTMONN	O	Edge signal monitor output	93	VIN6	I	External division into two of RF input2 (DVD)
46	GND5	-	Connect to GND 5				
47	RDTN	O	Synchronous PLL differential motion making RF signal reversing output	94	VIN5	I	External division into two of RF input1 (DVD)
48	RDTP	O	Synchronous PLL differential motion making RF signal forward output	95	VIN1	I	RF input1 (internal division into four DVD/CD)
				96	VIN2	I	RF input2 (internal division into four DVD/CD)
49	RDCKN	O	Synchronous PLL differential motion clock reversing output	97	VIN3	I	RF input3 (internal division into four DVD/CD)
				98	VIN4	I	RF input4 (internal division into four DVD/CD)
50	RDCKP	O	Synchronous PLL differential motion clock forward output	99	DIFP	O	RF signal output terminal P (RAM)
				100	DIFN	O	RF signal output terminal N (RAM)

■BU2092(IC642):PORT EXPANDER

1.Terminal Layout

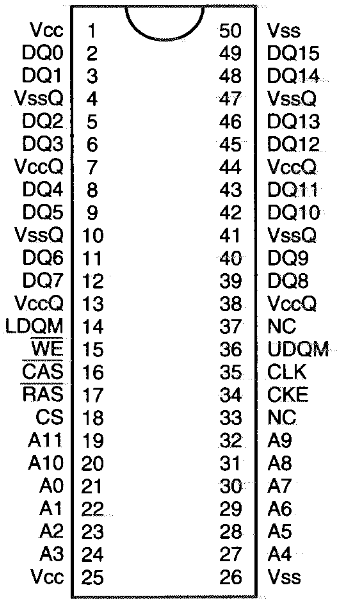

Vss 1
DATA 2
CLOCK 3
LCK 4
Q0 5
Q1 6
Q2 7
Q3 8
Q4 9
18 Vdd
17 OE
16 Q11
15 Q10
14 Q9
13 Q8
12 Q7
11 Q6
10 Q5
CONTROL CIRCUIT
OUTPUT BUFFER(OPEN DRAIN)
12BIT STRAGE RESISTER
12BIT SHIFT RESISTER

2.Pin Function

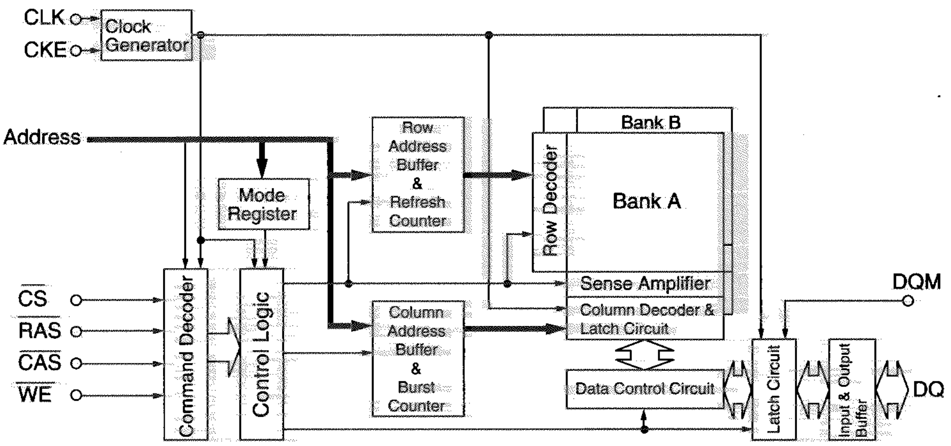
Pin No.	Symbol	I/O	Function
1	Vss	-	Connect to GND
2	DATA	I	Serial Data input
3	CLOCK	I	Shift Clock of Data
4	LCK	I	Latch Clock of Data
5~16	Q0~Q11	O	Parallel Data Output Latch Data: L / H OUTPUT: ON / OFF
17	$\overline{\text{OE}}$	I	Output Enable
18	Vdd	-	Power Supply

■D4516161AG5-A10 (IC508,IC504):16M SDRAM

1.Terminal Layout


Vcc 1 50 Vss
DQ0 2 49 DQ15
DQ1 3 48 DQ14
VssQ 4 47 VssQ
DQ2 5 46 DQ13
DQ3 6 45 DQ12
VccQ 7 44 VccQ
DQ4 8 43 DQ11
DQ5 9 42 DQ10
VssQ 10 41 VssQ
DQ6 11 40 DQ9
DQ7 12 39 DQ8
VccQ 13 38 VccQ
LDQM 14 37 NC
WE 15 36 UDQM
CAS 16 35 CLK
RAS 17 34 CKE
CS 18 33 NC
A11 19 32 A9
A10 20 31 A8
A0 21 30 A7
A1 22 29 A6
A2 23 28 A5
A3 24 27 A4
Vcc 25 26 Vss

2.Block diagram


CLK
CKE
Clock Generator
Address
Mode Register
Row Address Buffer & Refresh Counter
Row Decoder
Bank B
Bank A
Sense Amplifier
Column Decoder & Latch Circuit
DQM
CS
RAS
CAS
WE
Command Decoder
Control Logic
Column Address Buffer & Burst Counter
Data Control Circuit
Latch Circuit
Input & Output Buffer
DQ

3.Pin Function

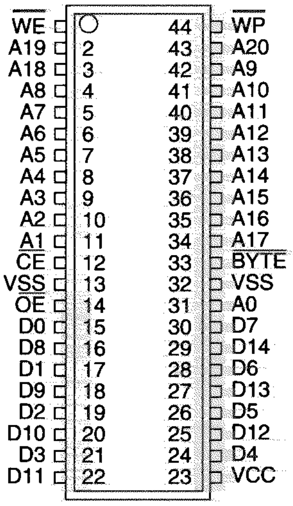
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	Vcc	-	Supply voltage	26	Vss	-	Connect to GND
2,3	DQ0,1	I/O	Data bus I/O from IC501	27~32	A4~9	I	Address input from IC501
4	VssQ	-	Ground for DQ	33	NC	-	Non connect
5,6	DQ2,3	I/O	Data bus I/O from IC501	34	CKE	I	Clock enable
7	VccQ	-	Power supply for output circuit	35	CLK	I	System clock input
8,9	DQ4,5	I/O	Data bus I/O from IC501	36	UDQM	I	Upper DQ mask enable
10	VssQ	-	Ground for output circuit	37	NC	-	Non connect
11,12	DQ6,7	I/O	Data bus I/O from IC501	38	VccQ	-	Power supply for output circuit
13	VccQ	-	Power supply for output circuit	39,40	DQ8,9	I/O	Data bus I/O from IC501
14	LDQM	I	Lower DQ mask enable	41	VssQ	-	Ground for output circuit
15	$\overline{\text{WE}}$	I	Write enable	42,43	DQ10,11	I/O	Data bus I/O from IC501
16	$\overline{\text{CAS}}$	I	Column address strobe	44	VccQ	-	Power supply for output circuit
17	$\overline{\text{RAS}}$	I	Row address strobe	45,46	DQ12,13	I/O	Data bus I/O from IC501
18	CS	I	Chip select	47	VssQ	-	Ground for output circuit
19,20	A11,10	I	Address input from IC501	48,49	DQ14,15	I/O	Data bus I/O from IC501
21~24	A0~3	I	Address input from IC501	50	Vss	-	Connect to GND
25	Vcc	-	Supply voltage				

■JCE8011(IC551):GRAPHIC CONTROLLER

Pin No.	Symbol	I/O	Function
1~8	VD0~7	I	DVD Image signal input (Multi plex data Y,Cr,Cb)
9	VCLKI	I	Dot clock signal input (27MHz)
10	HSYNCI	I	The horizontal synchronous signal input
11	VSYNCI	I	Vertical synchronous signal input
12	VCC	-	Power supply
13	VCLKD	O	Dot clock signal output (27MHz)
14	HSYNCO	O	'H' blanking output
15	VSYNCO	O	'V' blanking output
16~23	DOUT0~7	O	Digital data output
24	TEST	-	Test terminal (Uses as GND usually)
25	RESETB	I	System reset signal
26	GND	-	Connect to GND
27	NTB	I	Mode switching NTSC(low) / PAL(high)
28	DTSF0	I	Taking timing shift of VD input
29	DTSF1	I	Taking timing shift of VD input
30	VIDEG	I	Taking edge specification of VD input (0:up , 1:down)
31	DOSF0	I	Timing shift input of output data
32	DOSF1	I	Timing shift input of output data
33	XVRST	O	Non connect
34	F1	O	Field Identification signal output
35	HBL	O	'H' blanking output
36	VBL	O	'V' blanking output
37	VOEDG	I	Output timing setting of DOUT (0:up , 1:down)
38	VCC	-	Power supply
39~46	FRD7~0	I	Field memory read data input
47	GND	-	Connect to GND
48	FRCK	O	Field memory read clock
49	FWCK	O	Field memory write clock
50	FREB	O	Field memory read enable
51	FWEB	O	Field memory write enable
52	FRRSTB	O	Field memory read address reset
53	FWRSTB	O	Field memory write address reset
54~61	FWD7~0	O	Field memory write data output
62	VCC	-	Power supply
63~70	CHD7~0	I	Character ROM data
71	GND	-	Connect to GND
72	CHOEB	O	Character ROM output enable
73~82	CHA19~10	O	Character ROM address output
83	VCC	-	Power supply
84~93	CHA9~0	O	Character ROM address output
94	GND	-	Connect to GND
95	ACK	O	
96	CS1B	I	Serial data chip select for graphic control
97	CS2B	I	Serial data chip select for encoder control
98	SCK	I	Serial clock input
99	RXD	I	Serial input data
100	TXD	O	Serial output data

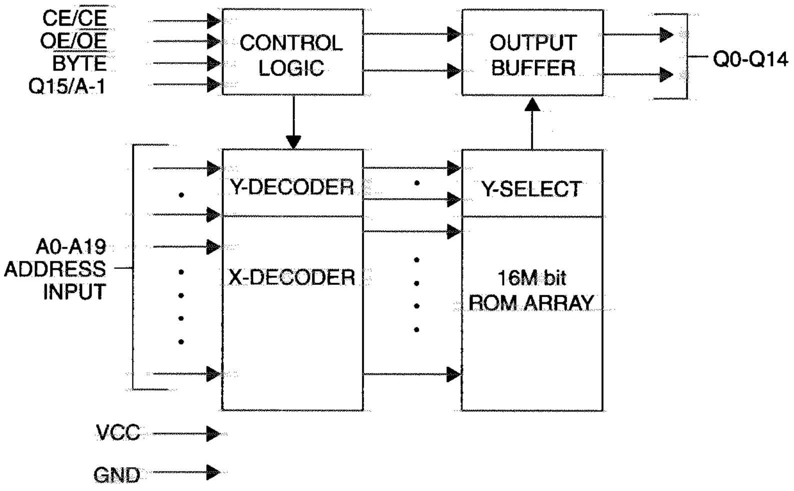
■JCE8041-X (IC553) : 16M ROM
M27C1602CZ (IC402)

1. Pin Layout



WE
A19
A18
A8
A7
A6
A5
A4
A3
A2
A1
CE
VSS
OE
D0
D8
D1
D9
D2
D10
D3
D11
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
44
43
42
41
40
39
38
37
36
35
34
33
32
31
30
29
28
27
26
25
24
23
WP
A20
A9
A10
A11
A12
A13
A14
A15
A16
A17
BYTE
VSS
A0
D7
D14
D6
D13
D5
D12
D4
VCC

2. Block Diagram



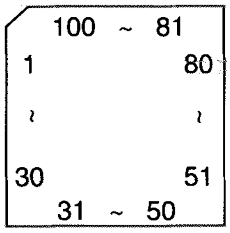
CE/CE
OE/OE
BYTE
Q15/A-1
CONTROL LOGIC
OUTPUT BUFFER
Q0-Q14
Y-DECODER
Y-SELECT
A0-A19 ADDRESS INPUT
X-DECODER
16M bit ROM ARRAY
VCC
GND

3. Pin Function

Pin No.	Symbol	I/O	Pin function
1	$\overline{WE}$	I	Write enable input
2,3	A19,18	I	Address input
4~11	A8~1	I	Address input
12	$\overline{CE}$	I	Chip enable input
13	VSS	-	Connect to GND
14	$\overline{OE}$	I	Output enable input
15~22	D0~3 D8~11	O	Data output
23	VCC	-	Power supply +5V
24~30	D4~7 D12~14	O	Data output
31	A0	I	Address input
32	VSS	-	Connect to GND
33	$\overline{BYTE}$	I	Word/Byte select
34~42	A17~9	I	Address input
43	A20	I	Address input
44	$\overline{WP}$	I	Write protect

■M30622EC-FP(IC714):System control micon

1.Terminal Layout



2.Key Matrix

	KEY IN 0	KEY IN 1	KEY IN 2	KEY IN 3	KEY IN 4	KEY IN 5
KEY OUT 0	DIGEST	3D PHONIC	VIDEO	EJECT	ON SCREEN	TITLE
KEY OUT 1	MENU	ENTER	▲	▼	▶	◀
KEY OUT 2	⏮	⏭	STOP	PAUSE	PLAY	———
KEY OUT3	POWER	———	———	———	———	———

3.Pin Function (1/2)

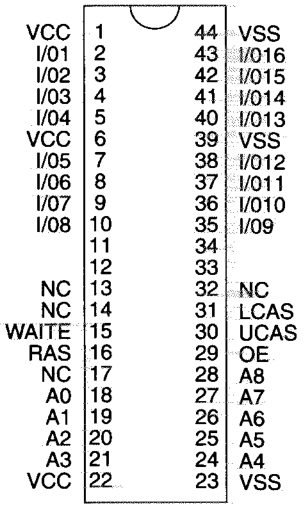
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	SDATA	O	FL driver data output	27	EECS	O	EEPROM Chip select signal
2	FLSCK	O	FL driver clock output	28	EECK	O	EEPROM Clock signal
3	CS4	O	VFPIC chip select output	29	EEDI	I	EEPROM Data input
4	DIF0	-	Non connect	30	EEDO	O	EEPROM Data output
5	OSDDO	O	OSD set data output	31	JLIPO	O	JLIP Signal output
6	OSDDI	I	OSD set data input	32	JLIPI	I	JLIP Signal input
7	OSDCK	O	OSD clock signal output	33	P65	-	Non connect
8	BYTE	-	Connect to GND	34	CPURST	O	LSI Reset signal output
9	CNVSS	-	Connect to GND	35	S2UDT	O	Communication data output for unit micon
10	OSDCS2	O	OSD chip select				
11	POWERON	O	Power on signal output	36	U2SDT	I	Communication data input From unit micon
12	RESET	I	Reset signal input				
13	XOUT	O	Clock signal output	37	SCLK	I	System clock signal input
14	VSS	-	Connect to GND	38	NTB	O	PAL/NT switch output
15	XIN	I	Clock signal input	39	BANK	O	OSDROM switch output
16	VCC	-	Power supply +5V	40	ACK	I	OSD active input
17	MNI	-	Non connect	41	TRAYOUT	I	Tray open detection signal
18	REQ	I	Request signal input	42	OSDCS1	O	OSD Chip select
19	REMO	I	Remocon signal input	43	OSDCS3	O	Encoder Chip select
20	VSYNC	I	Video sync input	44	RSTE	O	Encoder reset
21	TRAYIN	I	Tray close detection signal	45	MICSW	I	Mic detection signal
22	BUSY	O	Busy signal output	46	VS1	O	S1 Switch output
23	NT	O	PAL/NT switch output	47	VCD	O	Video mode switch output
24	HPIN	-	Non connect	48	NTSEL	O	PAL/NT switch output
25	AVCI	I	AV Compulink input	49	VS2	-	Non connect
26	AVCO	O	AV Compulink output	50	DMUT1	O	Surround mute output

3.Pin Function (2/2)

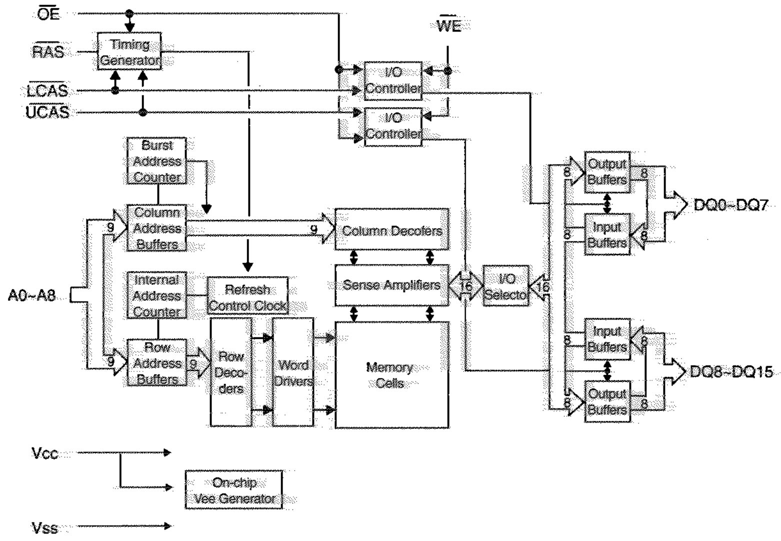
Pin No.	Symbol	I/O	Function
51	DMUT2	O	Mute output for Center,Subwoofer
52	PBD2	O	DA Power down output for Center,Sub woofer
53	PBD1	O	DA Power down output for Surround
54	DEMP2	O	De-emphasis output for Center,Sub woofer
55	DEMP1	O	De-emphasis output for surround
56	DENA	O	Data enable signal output
57	MA	O	DA Set output A
58	MB	O	DA Set output B
59	FS2	O	FS Switch output
60	M1.M3	O	DA Set output
61	MD	O	DA Set output D
62	VCC	-	Power supply +5V
63	MC	O	DA Set output C
64	VSS	-	Connect to GND
65	GAIN2	-	Non connect
66	GAIN1	-	Non connect
67	HPMUT	O	Headphone mute output
68	LMUTE	O	Sub woofer mute output
69	CMUTE	O	Center mute output
70	SMUTE	O	Surround mute output
71	MUTE	O	Front mute output
72	VMANUIND	O	VFPMANUAL indicator control
73	VSHARPIND	O	VFPSHARP indicator control
74	ENTERIND	O	ENTER indicator control
75	CS	O	Chip select for FL driver
76	POR	O	Chip select for FL driver
77	STANDBYIND	O	STANDBY indicator control
78	RESUMEIND	O	RESUME indicator control
79	VSOFTIND	O	VFPSOFT indicator control
80	P10	-	Non connect
81	KEYO5	O	Key matrix output 5
82	KEYO4	O	Key matrix output 4
83	KEYO3	O	Key matrix output 3
84	KEYO2	O	Key matrix output 2
85	KEYO1	O	Key matrix output 1
86	KEYO0	O	Key matrix output 0
87	KEYI5	I	Key matrix input 5
88	KEYI4	I	Key matrix input 4
89	KEYI3	I	Key matrix input 3
90	KEYI2	I	Key matrix input 2
91	KEYI1	I	Key matrix input 1
92	KEYI0	I	Key matrix input 0
93	MCHIND	O	5.1CH indicator control
94	DAUDIOIND	O	LPCM indicator control
95	SHUT1	I	Shuttle input 1
96	AVSS	-	Connect to GND
97	SHUT0	-	Non connect
98	VREF	I	Internal AD reference input
99	AVCC	-	Power supply +5V
100	P97	-	Non connect

■M54V16258B45TSK (IC303) : 4M DRAM

1.Terminal Layout


VCC 1
I/01 2
I/02 3
I/03 4
I/04 5
VCC 6
I/05 7
I/06 8
I/07 9
I/08 10
11
12
NC 13
NC 14
WAITE 15
RAS 16
NC 17
A0 18
A1 19
A2 20
A3 21
VCC 22
44 VSS
43 I/016
42 I/015
41 I/014
40 I/013
39 VSS
38 I/012
37 I/011
36 I/010
35 I/09
34
33
32 NC
31 LCAS
30 UCAS
29 OE
28 A8
27 A7
26 A6
25 A5
24 A4
23 VSS

2.Block Diagrams


OE
RAS
LCAS
UCAS
WE
Timing Generator
I/O Controller
I/O Controller
Burst Address Counter
Column Address Buffers
Column Decofers
Internal Address Counter
Refresh Control Clock
Sense Amplifiers
I/O Selector
Row Address Buffers
Row Decoders
Word Drivers
Memory Cells
Output Buffers
Input Buffers
Input Buffers
Output Buffers
DQ0~DQ7
DQ8~DQ15
A0~A8
9
16
8
Vcc
Vss
On-chip Vee Generator

3.Pin Function

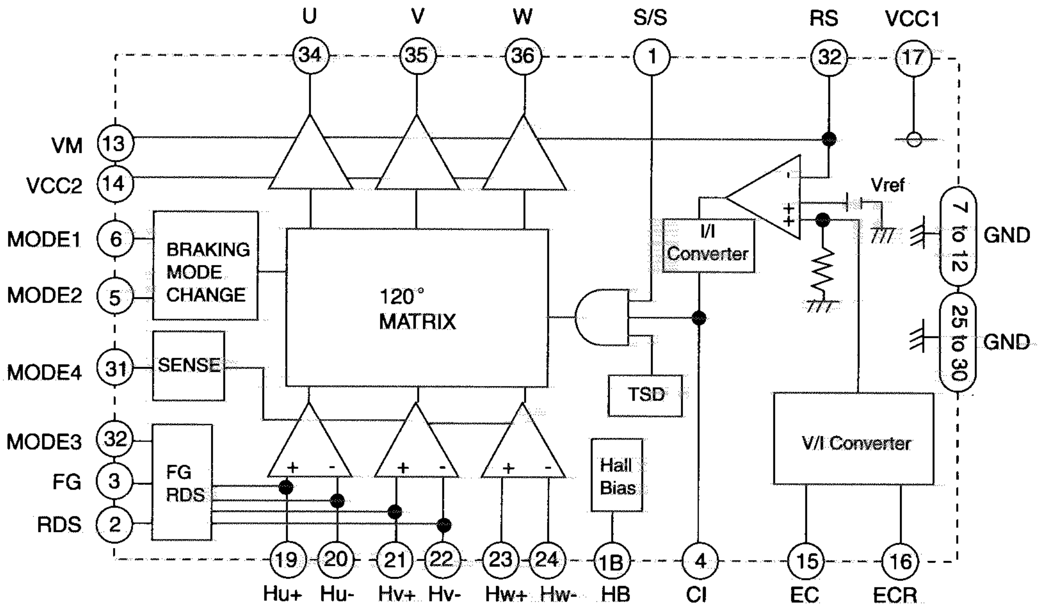
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	VCC	-	Power supply 3.3V	24~28	A4~A8	I	Address bus input
2~5	I/01~4	I/O	Data bus I/O	29	OE	O	Output enable
6	VCC	-	Power supply 3.3V	30	UCAS	I	Column address strobe
7~10	I/05~8	I/O	Data bus I/O	31	LCAS	I	Column address strobe
11~14		-	Non connect	32~34		-	Non connect
15	WAITE	I	Write enable	35~38	I/09~012	I/O	Data bus I/O
16	RAS	I	Row address strobe	39	VSS	-	Connect to GND
17	NC	-	Non connect	40~43	I/013~016	I/O	Data bus I/O
18~21	A0~3	I	Address bus input	44	VSS	-	Connect to GND
22	VCC	-	Power supply 3.3V				
23	VSS	-	Connect to GND				

4.Function table

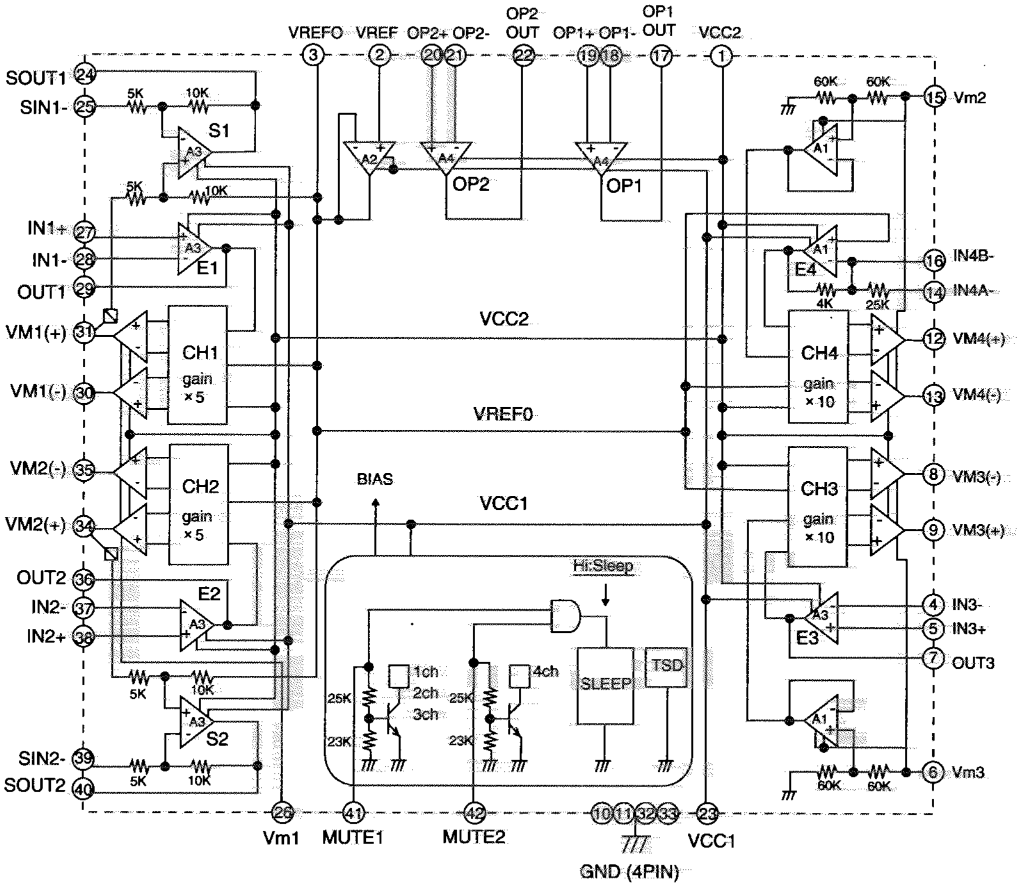
Input Pin					DQ Pin		Operation Mode
RAS	LCAS	UCAS	WE	OE	DQ0~DQ7	DQ8~DQ15	
H	*	*	*	*	High-Z	High-Z	Standby
L	H	H	*	*	High-Z	High-Z	Refresh
L	L	H	H	L	Dout	High-Z	Low-ranking byte read
L	H	L	H	L	High-Z	Dout	High-ranking byte read
L	L	L	H	L	Dout	Dout	Word read
L	L	H	L	H	Din	Don't Care	Low-ranking byte write
L	H	L	L	H	Don't Care	Din	High-ranking byte write
L	L	L	L	H	Din	Din	word write
L	L	L	H	H	High-Z	High-Z	————

*: "H" or "L"

■M56755AFP-X (IC251) : SPINDLE DRIVER

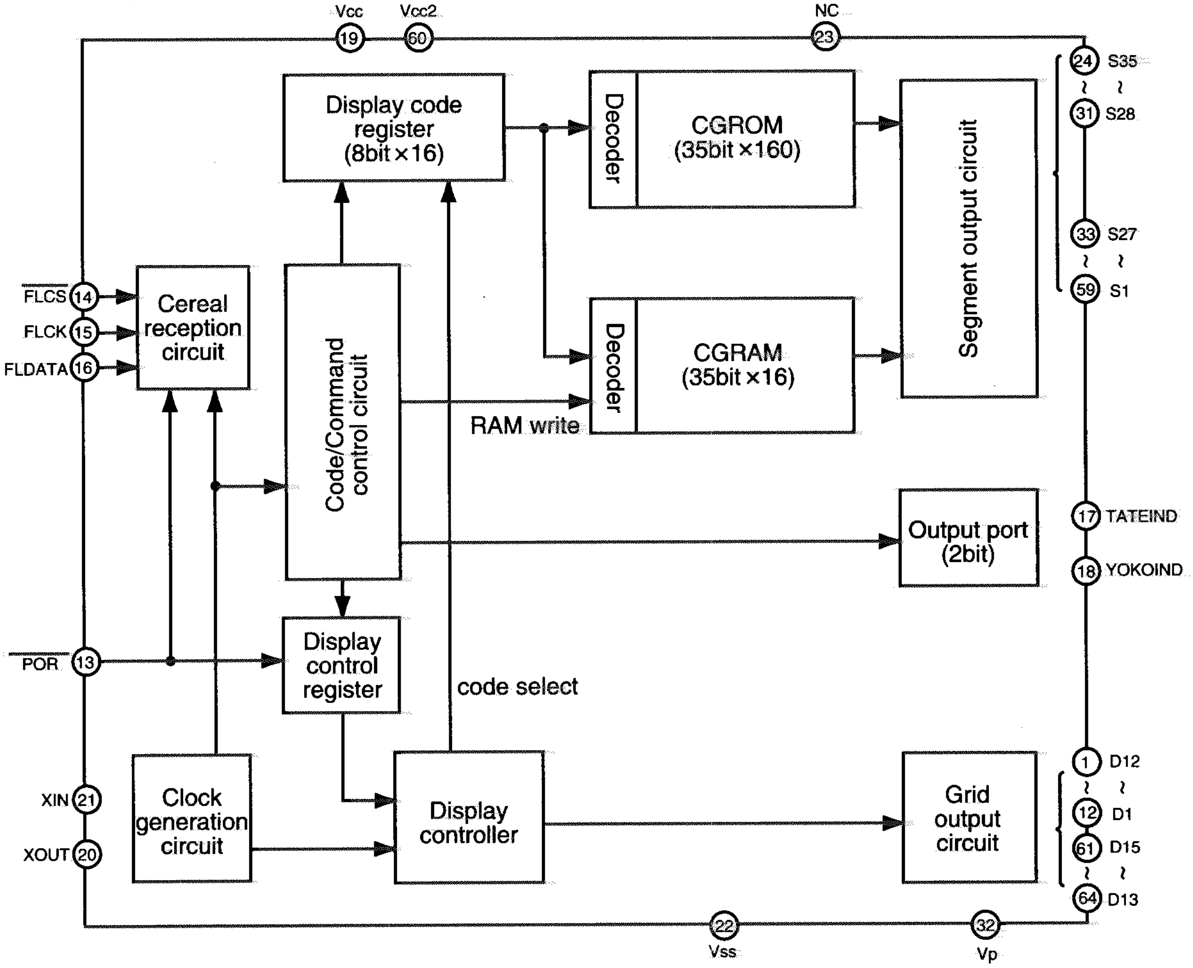

U
V
W
S/S
RS
VCC1
34
35
36
1
32
17
VM 13
VCC2 14
MODE1 6
MODE2 5
MODE4 31
MODE3 32
FG 3
RDS 2
BRAKING MODE CHANGE
SENSE
FG RDS
120° MATRIX
I/I Converter
TSD
Hall Bias
Vref
V/I Converter
7 to 12 GND
25 to 30 GND
19 Hu+
20 Hu-
21 Hv+
22 Hv-
23 Hw+
24 Hw-
1B HB
4 CI
15 EC
16 ECR

■M56759BFP-X (IC271) : 4CH DRIVER


VREFO
VREF
OP2+
OP2-
OP2 OUT
OP1+
OP1-
OP1 OUT
VCC2
3
2
20
21
22
19
18
17
1
SOUT1 24
SIN1- 25
S1
A3
5K
10K
A2
A4
OP2
A4
OP1
IN1+ 27
IN1- 28
OUT1 29
E1
VM1(+) 31
VM1(-) 30
CH1 gain ×5
VM2(-) 35
VM2(+) 34
CH2 gain ×5
OUT2 36
IN2- 37
IN2+ 38
E2
S2
SIN2- 39
SOUT2 40
VCC2
VREF0
BIAS
VCC1
Hi:Sleep
1ch
2ch
3ch
4ch
SLEEP
TSD
25K
23K
60K
15 Vm2
A1
E4
16 IN4B-
14 IN4A-
4K
25K
CH4 gain ×10
12 VM4(+)
13 VM4(-)
CH3 gain ×10
8 VM3(-)
9 VM3(+)
E3
4 IN3-
5 IN3+
7 OUT3
6 Vm3
26 Vm1
41 MUTE1
42 MUTE2
10 11 32 33
GND (4PIN)
23 VCC1

■M66004SP(IC831):FL DRIVER

1.Block Diagram

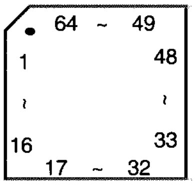

Vcc
Vcc2
NC
19
60
23
Display code register (8bit×16)
Decoder
CGROM (35bit×160)
Decoder
CGRAM (35bit×16)
Segment output circuit
24 S35
31 S28
33 S27
59 S1
FLCS 14
FLCK 15
FLDATA 16
Cereal reception circuit
Code/Command control circuit
RAM write
Output port (2bit)
17 TATEIND
18 YOKOIND
POR 13
Display control register
code select
XIN 21
XOUT 20
Clock generation circuit
Display controller
Grid output circuit
1 D12
12 D1
61 D15
64 D13
22 Vss
32 Vp

2.Pin function

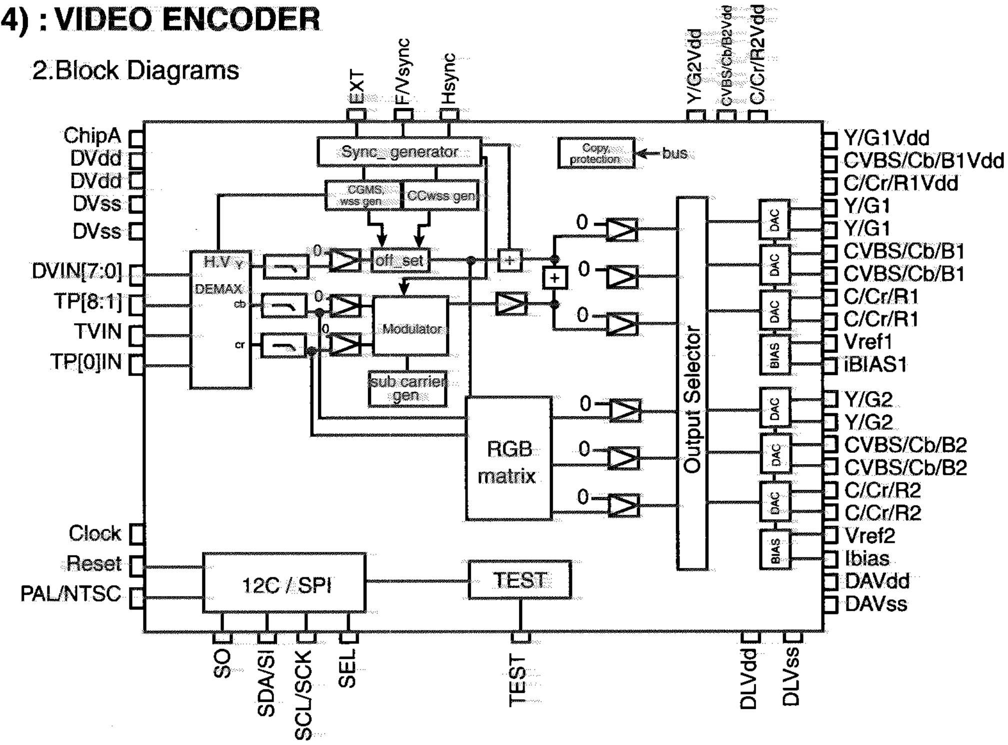
Pin.No.	Symbol	I/O	Function
1	D11		Non connect
2~12	D10~D0	O	FL grid control signal output.
13	POR	I	FL Driver chip select.
14	FLCS	I	Chip select signal input.
15	FLCK	I	Shift clock signal input.
16	FLDATA	I	Serial data input.
17	TATEIND	O	Indicator control signal output.
18	YOKOIND	O	Indicator control signal output.
19	VCC1	-	Power supply for internal logic.
20	XOUT	O	Clock signal output.
21	XIN	I	Clock signal input.
22	VSS	-	Connect to GND.
23	S35	-	Non connect.
24~31	S34~S27	O	FL Segment control signal output.
32	VP	-	Power supply.
33~59	S26~S0	O	FL Segment control signal output.
60	VCC2	-	Power supply for grid output and segment output.
61~64	D15~D12	O	FL grid control signal output.

■MC44724AVFU (IC554) : VIDEO ENCODER

1.Terminal Layout


64 ~ 49
1
48
16
33
17 ~ 32

2.Block Diagrams

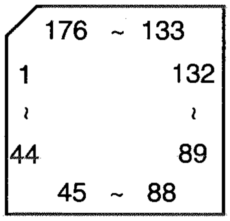

EXT
F/Vsync
Hsync
Y/G2Vdd
CVBS/Cb/B2Vdd
C/Cr/R2Vdd
ChipA
DVdd
DVdd
DVss
DVss
DVIN[7:0]
TP[8:1]
TVIN
TP[0]IN
Clock
Reset
PAL/NTSC
Sync_ generator
CGMS, wss gen
CCwss gen
Copy protection
bus
H.V Y
DEMAX
cb
cr
off_set
Modulator
sub carrier gen
RGB matrix
Output Selector
DAC
BIAS
12C / SPI
TEST
Y/G1Vdd
CVBS/Cb/B1Vdd
C/Cr/R1Vdd
Y/G1
Y/G1
CVBS/Cb/B1
CVBS/Cb/B1
C/Cr/R1
C/Cr/R1
Vref1
iBIAS1
Y/G2
Y/G2
CVBS/Cb/B2
CVBS/Cb/B2
C/Cr/R2
C/Cr/R2
Vref2
Ibias
DAVdd
DAVss
SO
SDA/SI
SCL/SCK
SEL
TEST
DLVdd
DLVss

3.Pin function

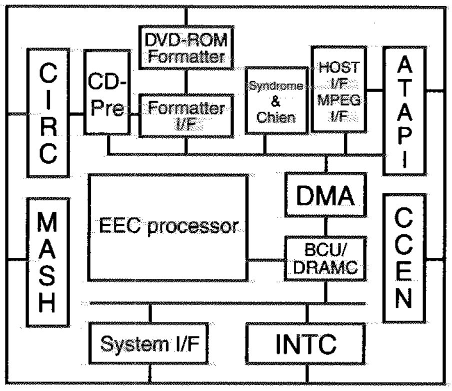
No.	Symbol	I/O	Function	No.	Symbol	I/O	Function
1	CVBS/Cb/B1	O	Analog composite drive signal (+)	33	SO	-	Non connect
2	$\overline{\text{CVBS/Cb/B1}}$	O	Analog composite drive signal (-)	34	SDA/SI	I	SPI Mode : Serial data input
3	CVBS/Cb/B1Vdd	-	Power supply for CVBS/Cb/B DAC1	35	SCL/SCK	I	Serial clock input
4	Y/G1	O	Analog brightness signal/G drive signal (+)	36	SEL	I	Power supply for serial data,chip select,digital
5	$\overline{\text{Y/G1}}$	O	Analog brightness signal/G drive signal (-)	37	DVdd	--	Power supply for digital circuit
6	Y/G1/Vdd	-	Power supply for Y/G DAC	38	DVss	--	Digital ground
7	C/Cr/R1	O	Analog chroma signal (+)	39	DVIN7	I/O	Y data input / test data I/O
8	$\overline{\text{C/Cr/R1}}$	O	Analog chroma signal (-)	40	DVIN6	I/O	Y data input / test data I/O
9	C/Cr/R1Vdd	-	Power supply for C/Cr/RDAC	41	DVIN5	I/O	Y data input / test data I/O
10	DAVss	-	Connect to ground for DAC	42	DVIN4	I/O	Y data input / test data I/O
11	TBIAS1	O	Standard BIAS for DAC1	43	DVIN3	I/O	Y data input / test data I/O
12	Vref1	-	Standard voltage for DAC1	44	DVIN2	I/O	Y data input / test data I/O
13	DAVdd	-	Power supply for DAC	45	DVIN1	I/O	Y data input / test data I/O
14	Vref2	-	Standard voltage for DAC2	46	DVIN0	I/O	Y data input / test data I/O
15	TBIAS2	O	Standard BIAS for DAC2	47	TVIN	I	VIDEO mote on Reset(0:nomal, 1:mute)
16	NC	-	Non connect	48	EXT	I/O	Frame output / VBI information input
17	CVBS/Cb/B2	O	Analog composite drive signal (+)	49	F/Vsyac	I/O	Frame / Vertical, synchronous I/O
18	CVBS/Cb/B2	O	Analog composite drive signal (-)	50	Chsyac	I/O	The horizontal, synchronous I/O
19	CVBS/Cb/B2Vdd	-	Power supply for CVBS/Cb/B DAC2	51	DATST	I	Data input
20	Y/G2	O	Analog brightness signal/G drive signal (+)	52	TP-8	I/O	Multiplex data input
21	$\overline{\text{Y/G2}}$	O	Analog brightness signal/G drive signal (-)	53	TP7	I/O	Multiplex data input
22	Y/GVdd	-	Power supply for Y/G DAC	54	TP6	I/O	Multiplex data input
23	C/Cr/R2	O	Analog chroma signal (+)	55	TP5	I/O	Multiplex data input
24	$\overline{\text{C/Cr/R2}}$	O	Analog chroma signal (-)	56	DVss	-	Ground for digital circuit
25	C/Cr/R2Vdd	-	Power supply for C/Cr/RDAC2	57	DVdd	-	Power supply for digital circuit
26	ChipA	-	Chip address selection	58	TP4	I/O	Data input / Test data I/O
27	TEST	I	Connect to test pin	59	TP3	I/O	Data input / Test data I/O
28	DVdd	-	Digital ground	60	TP2	I/O	Data input / Test data I/O
29	CLOCK	I	Clock signal input (27MHz)	61	TP1	I/O	Data input / Test data I/O
30	DVss	-	Power supply for digital circuit	62	TP0	I/O	Data input / Test data I/O
31	Reset	I	Reset signal input L:ON	63	DLVdd	-	Power supply for D/A converter
32	PAL/NTSC	I	Selection NTSC/PAL NTSC:L PAL:H	64	DLVss	-	Ground for D/A converter

■MN103005AN2G(IC301):OPTICAL DISC CONTROLLER

1.Terminal Layout



2.Block Diagrams



3.Pin Function (1/2)

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	HDD8	I/O	ATAPI data I/O	39	DRAMD2	I/O	DRAM data I/O
2	HDD7	I/O	ATAPI data I/O	40	DRAMD14	I/O	DRAM data I/O
3	5VDD	-	Connect to GND	41	DRAMD1	I/O	DRAM data I/O
4	RESET	I	Reset signal input for ATAPI	42	DRAMD15	I/O	DRAM data I/O
5	MASTER	I	Master/Sleave Selection for ATAPI	43	DRAMD0	I/O	DRAM data I/O
6	VSS	-	Connect to GND	44	VDD	-	Power supply
7	DRAMA4	O	DRAM address data output	45	PVDD	-	Power supply
8	DRAMA3	O	DRAM address data output	46	PVSS	-	Connect to GND
9	DRAMA5	O	DRAM address data output	47	$\overline{\text{RST}}$	I	System reset signal input
10	DRAMA2	O	DRAM address data output	48	MMOD	I	Test mode switching(connect VSS)
11	DRAMA6	O	DRAM address data output	49	OSCO1	-	Non connect
12	DRAMA1	O	DRAM address data output	50	OSCI1	I	Oscillation signal input (27MHz)
13	VDD	-	Power supply	51	VSS	-	Connect to GND
14	DRAMA7	O	DRAM address data output	52	MONI0	O	Internal signal monitor
15	DRAMA0	O	DRAM address data output	53	MONI1	O	Internal signal monitor
16	DRAMA8	O	DRAM address data output	54	MONI2	O	Internal signal monitor
17	DRAMA10	-	Non connect	55	MONI3	O	Internal signal monitor
18	DRAMA9	-	Non connect	56	SDATA	I/O	Debugging serial data (270ohm pull up)
19	DRAMA11	-	Non connect	57	SCLOCK	I/O	Debugging serial clock (270ohm pull up)
20	VSS	-	Connect to GND	58	VDD	-	Power supply
21	$\overline{\text{DRAMOE}}$	O	DRAM data output	59	TEHLD	-	Non connect
22	$\overline{\text{RAS}}$	O	DRAM RAS signal	60	DTRD	-	Non connect
23	$\overline{\text{CAS1}}$	O	DARM CAS signal	61	IDCT	-	Non connect
24	$\overline{\text{DRAMWE}}$	O	DRAM memory write	62	VSS	-	Connect to GND
25	$\overline{\text{CASO}}$	O	DRAM CAS signal	63	RDCKP	I	PLL synchronous clock differential motion signal
26	DRAMD8	I/O	DRAM data I/O	64	RDCKN	I	PLL synchronous clock differential motion signal
27	DRAMD7	I/O	DRAM data I/O	65	RDTP	I	PLL synchronous RF data differential motion signal
28	VDD	-	Power supply	66	RDTN	I	PLL synchronous RF data differential motion signal
29	DRAMD9	I/O	DRAM data I/O	67	DSLO	I	Data slice
30	DRAMD6	I/O	DRAM data I/O	68	VDD	-	Power supply
31	DRAMD10	I/O	DRAM data I/O	69	PLLOK	O	Flame mark detection
32	DRAMD5	I/O	DRAM data I/O	70	IDHOLD	-	Non connect
33	DRAMD11	I/O	DRAM data I/O	71	JMPINH	-	Non connect
34	DRAMD4	I/O	DRAM data I/O	72	LG	-	Non connect
35	DRAMD12	I/O	DRAM data I/O	73	TRON	I	Tracking ON
36	VSS	-	Connect to GND	74	SPDT	O	CIRC spindle error serial data
37	DRAMD3	I/O	DRAM data I/O	75	SPCK	I	CIRC spindle error serial clock
38	DRAMD13	I/O	DRAM data I/O	76	SPEN	I/O	CIRC spindle error serial enable

3.Pin Function (2/2)

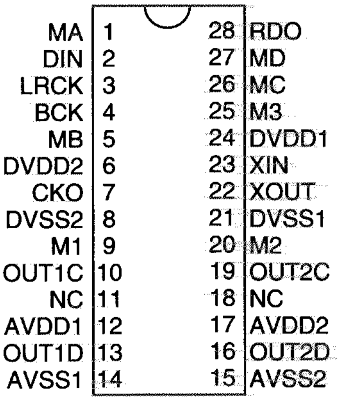
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
77	CPUDR17	I	System control address input	127	BDO	I	RF drop out
78	CPUDR16	I	System control address input	128	$\overline{\mathrm{WAITDOC}}$	O	System control wait control
79	CPUDR15	I	System control address input	129	$\overline{\mathrm{MRST}}$	-	Non connect
80	VSS	-	Connect to GND	130	SPARI	I	FG input
81	AVDD	-	Power supply	131	TX	O	Digital audio
82	OUTLN	-	Non connect	132	CLKOUT2	O	Clock signal output (13.5/13.9344MHz)
83	OUTLP	-	Non connect	133	VSS	-	Connect to GND
84	OUTRN	-	Non connect	134	CLKOUT1	O	Clock signal output (13.5MHz)
85	OUTRP	-	Non connect	135	5VDD	-	Power supply VDD+5V
86	VCOF	I	VCO unit control voltage input	136	$\overline{\mathrm{EJECT}}$	I	Eject detection signal
87	TREF	I	VCO reference current input	137	$\overline{\mathrm{TRYCL}}$	I	Tray close detection signal
88	AVSS	-	Connect to GND	138	$\overline{\mathrm{DASP}}$	I/O	Non connect
89	VDD	-	Power supply	139	$\overline{\mathrm{CS3FX}}$	I	Host chip selection for ATAPI
90	OSXI2	I	Oscillation terminal(33.8688MHz)	140	$\overline{\mathrm{CS1FX}}$	I	Host chip selection for ATAPI
91	OSCO2	O	Oscillation terminal(33.8688MHz)	141	VDD	-	Power supply
92	CPUADR14	I	System control address input	142	DA2	I	Host address for ATAPI
93	CPUADR13	I	System control address input	143	DA0	-	Non connect
94	CPUADR12	I	System control address input	144	PDIAG	-	Non connect
95	VSS	-	Connect to GND	145	VSS	-	Connect to GND
96	CPUADR11	I	System control address input	146	DA1	-	Non connect
97	CPUADR10	I	System control address input	147	$\overline{\mathrm{IOXS16}}$	-	Non connect
98	CPUADR9	I	System control address input	148	INTRO	O	Host interrupt output for ATAPI
99	CPUADR8	I	System control address input	149	$\overline{\mathrm{DMACK}}$	I	Host DMA response for ATAPI
100	CPUADR7	I	System control address input	150	5VDD	-	Power supply
101	CPUADR6	I	System control address input	151	IORDY	-	Non connect
102	CPUADR5	I	System control address input	152	$\overline{\mathrm{IORD}}$	I	Host read for ATAPI
103	CPUADR4	I	System control address input	153	$\overline{\mathrm{IOWR}}$	I	Host write for ATAPI
104	VDD	-	Power supply	154	VSS	-	Connect to GND
105	CPUADR3	I	System control address input	155	DMARQ	-	Non connect
106	CPUADR2	I	System control address input	156	HDD15	I/O	ATAPI data I/O
107	CPUADR1	I	System control address input	157	HDD0	I/O	ATAPI data I/O
108	CPUADR0	I	System control address input	158	VSS	-	Connect to GND
109	$\overline{\mathrm{CS}}$	I	System control chip select	159	HDD14	I/O	ATAPI data I/O
110	$\overline{\mathrm{WR}}$	I	System control write	160	5VDD	-	Power supply
111	$\overline{\mathrm{RD}}$	I	System control read	161	HDD1	I/O	ATAPI data I/O
112	CPUDT7	I/O	System control data I/O	162	HDD13	I/O	ATAPI data I/O
113	CPUDT6	I/O	System control data I/O	163	HDD2	I/O	ATAPI data I/O
114	VSS	-	Connect to GND	164	VSS	-	Connect to GND
115	CPUDT5	I/O	System control data I/O	165	HDD12	I/O	ATAPI data I/O
116	CPUDT4	I/O	System control data I/O	166	VDD	-	Power supply
117	CPUDT3	I/O	System control data I/O	167	HDD3	I/O	ATAPI data I/O
118	CPUDT2	I/O	System control data I/O	168	HDD11	I/O	ATAPI data I/O
119	CPUDT1	I/O	System control data I/O	169	VSS	-	Connect to GND
120	VDD	-	Power supply	170	HDD4	I/O	ATAPI data I/O
121	CPUDT0	I/O	System control data I/O	171	HDD10	I/O	ATAPI data I/O
122	$\overline{\mathrm{INT0}}$	O	System control interrupt 0	172	HDD5	I/O	ATAPI data I/O
123	$\overline{\mathrm{INT1}}$	O	System control interrupt 1	173	5VDD	-	Power supply
124	DASPST	I/O	DASP signal initializing	174	HDD9	I/O	ATAPI data I/O
125	CPDET2	I	Outer side capa detection	175	VSS	-	Connect to GND
126	CPDET1	I	Inner side capa detection	176	HDD6	I/O	ATAPI data I/O

■MN102L25GCF(IC401):UNIT CPU

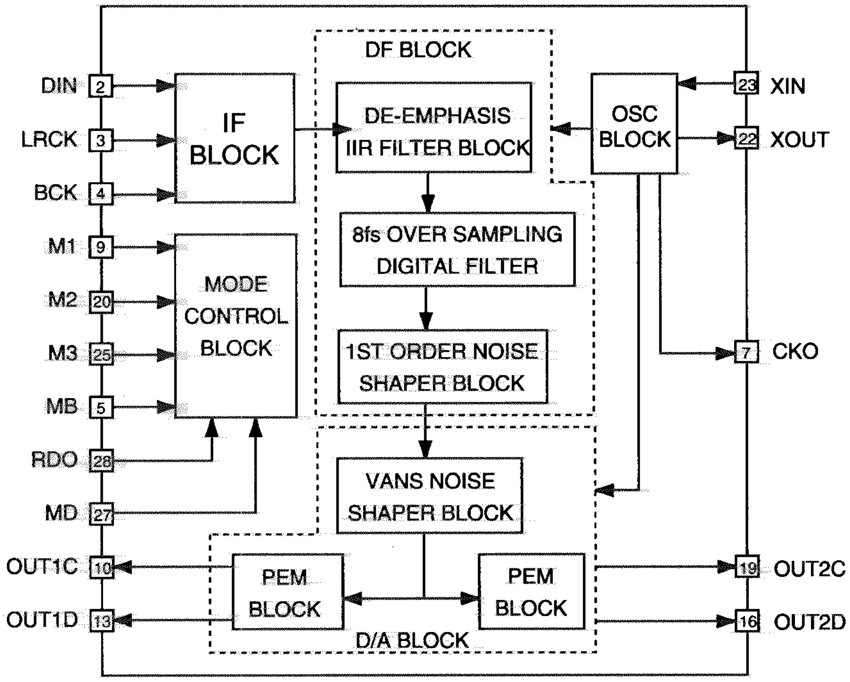
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	WAIT	I	Micon wait signal input	51	SWCLOSE	I	Detection switch of tray close
2	RE	O	Read enable	52	SWOPEN	I	Detection switch of tray open
3	MUTE	O	Driver mute	53	ADSCEN	O	Serial enable signal for ADSC
4	WEH	O	Write enable	54	VDD	-	Non connect
5	CS0	O	Non connect	55	EFPEN	O	Serial enable signal for FEP
6	CS1	O	Chip select for ODC	56	SLEEP	O	Standby signal for FEP
7	CS2	O	Chip select for ZIVA	57	BUSY	I	Communication busy
8	CS3	O	Chip select for outer ROM	58	REQ	O	Communication Request
9	TCLOSE	O	Tray close signal output	59	WEROM	O	Non connect
10	TOPEN	O	Tray open signal output	60	WPROM	O	Non connect
11	LSIRST	I	LSI reset	61	VSS	-	Power supply
12	WORD	O	Bus selection input	62	EECS	O	Chip select signal for EEPROM
13	AO0	O	Address bus 0 for CPU	63	EECK	O	Clock signal for EEPROM
14	AO1	O	Address bus 1 for CPU	64	EEDI	I	Input data for EEPROM
15	AO2	O	Address bus 2 for CPU	65	EEDO	O	Output data for EEPROM
16	AO3	O	Address bus 3 for CPU	66	VDD	-	Power supply
17	VDD	-	Power supply	67	SCLK0	I	Communication clock
18	SYSCLK	O	System clock signal output	68	S2UDT	I	Communication input data
19	VSS	-	Power supply	69	S2SDT	O	Communication output data
20	XI	-	Non connect	70	CPSCK	O	Clock for ADSC serial
21	XO	-	Non connect	71	SDIN	I	ADSC serial data input
22	VDD	-	Power supply	72	SDOUT	O	ADSC serial data output
23	OSCI	I	Clock signal input(13.5MHz)	73	-	-	Non connect
24	OSCO	-	Non connect	74	-	-	Non connect
25	MODE	I	CPU Mode selection input	75	NMI	-	Non connect
26	A4	O	Address bus 4 for CPU	76	ADSCIRQ	I	Interrupt input of ADSC
27	A5	O	Address bus 5 for CPU	77	ODCIRQ	I	Interrupt input of ODC
28	A6	O	Address bus 6 for CPU	78	DECIRQ	I	Interrupt input of ZIVA
29	A7	O	Address bus 7 for CPU	79	WAKEUP	O	Non connect
30	A8	O	Address bus 8 for CPU	80	ODCIRQ2	I	Non connect
31	A9	O	Address bus 9 for CPU	81	ADSEP	I	Address data selection input
32	A10	O	Address bus 10 for CPU	82	RST	I	Reset input
33	A11	O	Address bus 11 for CPU	83	VDD	-	Power supply
34	VDD	-	Power supply	84	TEST1	I	Test signal 1 input
35	A12	O	Address bus 12 for CPU	85	TEST2	I	Test signal 2 input
36	A13	O	Address bus 13 for CPU	86	TEST3	I	Test signal 3 input
37	A14	O	Address bus 14 for CPU	87	TEST4	I	Test signal 4 input
38	A15	O	Address bus 15 for CPU	88	TEST5	I	Test signal 5 input
39	A16	O	Address bus 16 for CPU	89	TEST6	I	Test signal 6 input
40	A17	O	Address bus 17 for CPU	90	TEST7	I	Test signal 7 input
41	A18	O	Address bus 18 for CPU	91	TEST8	I	Test signal 8 input
42	A19	O	Address bus 19 for CPU	92	VSS	-	Power supply
43	VSS	-	Power supply	93	D0	I/O	Data bus 0 of CPU
44	A20	O	Address bus 20 for CPU	94	D1	I/O	Data bus 1 of CPU
45	-	-	Non connect	95	D2	I/O	Data bus 2 of CPU
46	STOP	-	Non connect	96	D3	I/O	Data bus 3 of CPU
47	ADPD	-	Non connect	97	D4	I/O	Data bus 4 of CPU
48	-	-	Non connect	98	D5	I/O	Data bus 5 of CPU
49	-	-	Non connect	99	D6	I/O	Data bus 6 of CPU
50	TRVSW	I	Detection switch of traverse inside	100	D7	I/O	Data bus 7 of CPU

■MN35503-X (IC702) : D/A CONVERTER

1.Terminal Layout


MA 1
DIN 2
LRCK 3
BCK 4
MB 5
DVDD2 6
CKO 7
DVSS2 8
M1 9
OUT1C 10
NC 11
AVDD1 12
OUT1D 13
AVSS1 14
28 RDO
27 MD
26 MC
25 M3
24 DVDD1
23 XIN
22 XOUT
21 DVSS1
20 M2
19 OUT2C
18 NC
17 AVDD2
16 OUT2D
15 AVSS2

2.Block Diagrams


DIN 2
LRCK 3
BCK 4
M1 9
M2 20
M3 25
MB 5
RDO 28
MD 27
OUT1C 10
OUT1D 13
IF BLOCK
MODE CONTROL BLOCK
DF BLOCK
DE-EMPHASIS IIR FILTER BLOCK
8fs OVER SAMPLING DIGITAL FILTER
1ST ORDER NOISE SHAPER BLOCK
VANS NOISE SHAPER BLOCK
PEM BLOCK
PEM BLOCK
D/A BLOCK
OSC BLOCK
23 XIN
22 XOUT
7 CKO
19 OUT2C
16 OUT2D

3.Pin Function

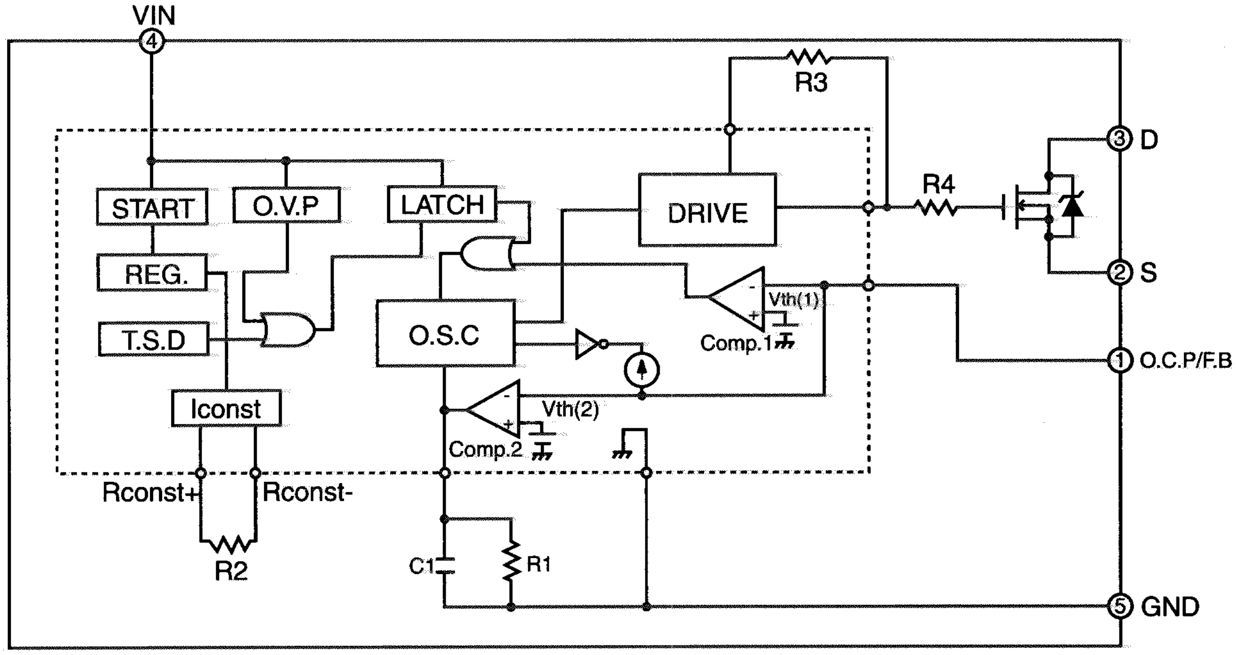
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	MA	-	Connected to ground	15	AVSS2	-	Analog ground 2
2	DIN	I	Data input	16	OUT2D	O	2D PEM output
3	LRCK	I	L/R clock input	17	AVDD2	-	Analog power supply 2
4	BCK	I	Bit clock input	18	NC	-	Non connection
5	MB	I	De-emphasis ON signal	19	OUT2C	O	2C PEM output
6	DVDD2	-	Digital power supply2	20	M2	-	Connected to ground
7	CKO	I	Clock output	21	DVSS1	-	Digital ground pin 1
8	DVSS2	-	Digital ground 2	22	XOUT	O	Crystal oscillator output
9	M1	-	Connected to ground	23	XIN	I	Crystal oscillator input
10	OUT1C	O	1C PEM output	24	DVDD1	-	Digital power supply 1
11	NC	-	Non connect	25	M3	-	Connected to ground
12	AVDD1	-	Analog power supply 1	26	MC	-	Connected to ground
13	OUT1D	O	1d PEM output	27	MD	I	Reset signal/Digital Att.control signal input
14	AVSS1	-	Analog ground 1	28	RDO	-	Not used

■MN67702VRZC3 (IC201) : SERVO CONTROLLER

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	PWM1B	O	Non connect	51	VDD	-	Power supply for digital
2	VSS	-	Ground for digital	52	DSL0	I	Data edge signal (FEP)
3	TEST3	-	Non connect	53	VCK8	I	Output of VC0 single division clock into eight
4	NC	-	Non connect	54	FUPDN	O	Frequency UP/DOWN (FEP)
5	VDD	-	Power supply for digital	55	VSS	-	Ground for digital
6	TEST4	-	Monitor signal output	56	AVSS1	-	Ground for analog
7	TEST5	-	Monitor signal output	57	VREFLA	I	AD lower reference voltage (1.2V ±0.1V)
8	TEST2	-	Non connect	58	VREFMA	I	AD middle reference voltage (2.2V ± 0.1V)
9	MINTEST	-	Joint to ground	59	VREFHA	I	AD upper reference voltage (3.2V±0.1V)
10	TEST6	-	Non connect	60	AVDD1	-	Power supply for analog
11	NC	-	Non connect	61	AD10	-	Joint 10pF
12	LDONA	O	Laser ON control A (ON/OFF)	62	VREF	I	Reference voltage input (FEP)
13	LDONB	O	Laser ON control B (ON/OFF)	63	TKDOF	I	Tracking control voltage input
14	TEST7	-	Monitor signal output	64	VREFHD	I	Analog Upper reference voltage (3.2V±0.1V)
15	TEST1	-	Non connect	65	VREFLD	I	Analog lower reference voltage (1.2V± 0.1V)
16	TEST0	-	Non connect	66	VREF	I	Analog reference voltage (2.2V±0.1V)
17	/RESETIN	I	Reset signal input	67	AS1	I	ASI signal (FEP)
18	VSS	-	Ground for digital	68	FE	I	Focus error signal (FEP)
19	CPUJRQ	O	Wedge request for system control	69	REFNV	I	RF envelope signal (FEP)
20	CPSEN	I	System control serial I/F chip select	70	TE	I	Tracking error signal (FEP)
21	CPSCK	I	System control serial I/F clock	71	AS2	I	AS2 signal (FEP)
22	CPSDTIN	I	System control serial I/F data input	72	TG	I	TG signal (FEP)
23	CPSDTOT	O	System control serial I/F data output	73	AD7	-	Non connect
24	SPOT	I	Spindle error serial I/F data input	74	AD8	-	Non connect
25	SPCK	O	Spindle error serial I/F clock	75	JITOUT	I	Jitter signal (FEP)
26	NC	-	Non connect	76	AVDD2	-	Power supply for analog
27	TRAY-OUT	I	Tray open switch input	77	AVSS2	-	Ground for analog
28	SPEN	O	Serial I/F enable signal	78	FBAL	O	Focus balance adj. output (FEP)
29	NC	-	Non connect	79	DOF1	O	Data slice offset adj. for CD (FEP)
30	NC	-	Non connect	80	BOOST	O	Boost level (equalizer)
31	HAGUP2	O	Head amp. gain select H : UP	81	FC	O	Cut off frequency (equalizer)
32	VDD	-	Power supply for digital	82	DOFO	O	Data slice offset adj. for DVD (FEP)
33	TESTA	-	Joint to ground	83	TRSDRV	O	Traverse control output
34	HFCLK	I	13.5MHz system clock input	84	TRDRV	O	Tracking control output
35	TESTD	-	Joint to ground	85	FCDRV	O	Focus control output
36	PULIN	O	DSL & PLL high boost signal (FEP)	86	X4I	I	4X clock input
37	PLLOK	I	PLL OK signal input (ODC)	87	VSS	O	Ground for digital
38	VSS	-	Ground for digital	88	X40	O	4X clock output
39	/TRON	O	Tracking ON (ODC/FEP)	89	FG	I	FG signal input
40	TRAYCN1	O	Tray control direction select signal output	90	BDO	I	BDO signal (FEP)
41	TRAYCN2	O	Tray control direction select signal output	91	OFTR	I	Off track signal (FEP)
42	TRAY-IN	I	Tray IN switch input	92	TKCRS1	I	Track cross signal (FEP)
43	MMPW	O	Off track det.palus mono multi	93	NC	-	Non connect
				94	VDD	-	Power supply for digital
44	GBAL	O	Tangential balance (FEP)	95	EC	O	Spindle motor control output
45	OFTLVL	O	Off track slice level (FEP)	96	TRVSW	I	Traverse inside position det.
46	TBAL	O	Tracking balance (FEP)	97	ST/SP	O	Spindle motor control set (start/stop)
47	TRAY	O	Tray control output	98	PWM0A	-	Non connect
48	BDOLVL	O	BDO slice level (FEP)	99	PWM0B	-	Non connect
49	NC	-	Non connect	100	PWM1A	-	Non connect
50	TSTSG	O	Calibration output				

■STR-F6652(IC901)

1.Block Diagrams


VIN
4
R3
3 D
START
O.V.P
LATCH
DRIVE
R4
REG.
2 S
Vth(1)
Comp.1
T.S.D
O.S.C
1 O.C.P/F.B
Iconst
Vth(2)
Comp.2
Rconst+
Rconst-
R2
C1
R1
5 GND

2.Pin Function

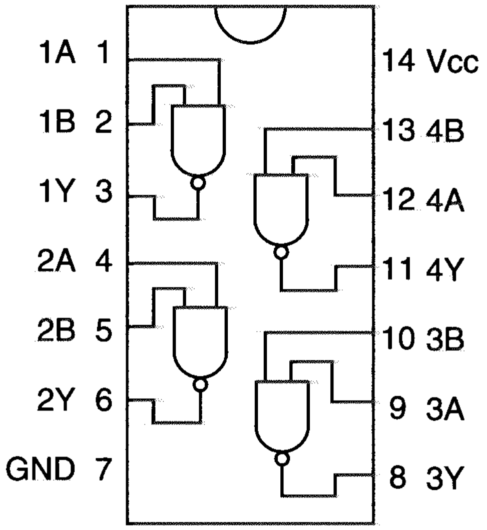
Pin No.	Symbol	I/O	Function
1	O.C.P/F.B	I	Overcurrent/Feedback terminal Input of over current detection signal and constant voltage control signal
2	S	O	MOS FET source
3	D	O	MOS FET drain
4	VIN	-	Input of power supply for control circuit
5	GND	-	Connect to GND

3.Other Function

Symbol	Function
O.V.P	Built-in overvoltage protection circuit
T.S.D	Built-in terminal shutdown circuit

■TC74VHC00FT-X(IC510)

1.Block Diagrams

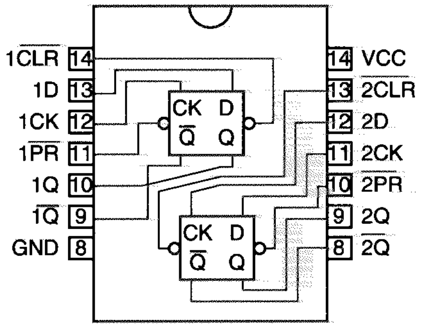

1A 1
1B 2
1Y 3
2A 4
2B 5
2Y 6
GND 7
14 Vcc
13 4B
12 4A
11 4Y
10 3B
9 3A
8 3Y

2.The truth value table

A	B	Y
L	L	H
L	H	H
H	L	H
H	H	L

■TC74VHC74FT-X(IC509):FLIP FLOP/PRESET CLEAR

1.Terminal Layout/Block diagrams


1$\overline{CLR}$ 14
1D 13
1CK 12
1$\overline{PR}$ 11
1Q 10
1$\overline{Q}$ 9
GND 8
14 VCC
13 2$\overline{CLR}$
12 2D
11 2CK
10 2$\overline{PR}$
9 2Q
8 2$\overline{Q}$
CK D
$\overline{Q}$ Q
CK D
$\overline{Q}$ Q

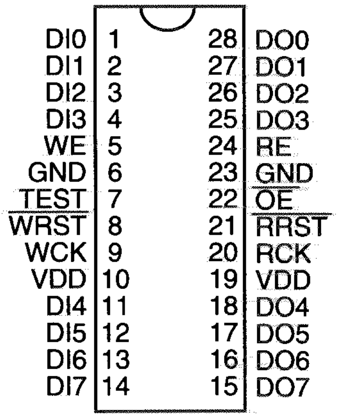
2.The truth value table

INPUTS				OUTPUTS		FUNCTION
$\overline{CLR}$	$\overline{PR}$	D	CK	Q	$\overline{Q}$	
L	H	X	X	L	H	CLEAR
H	L	X	X	H	L	PRESET
L	L	X	X	H	H	—
H	H	L	↑	L	H	—
H	H	H	↑	H	L	—
H	H	X	↓	Qn	$\overline{Qn}$	NO CHANGE

X : Don't care

■UPD42280GU-30-X(IC552):2M RAM

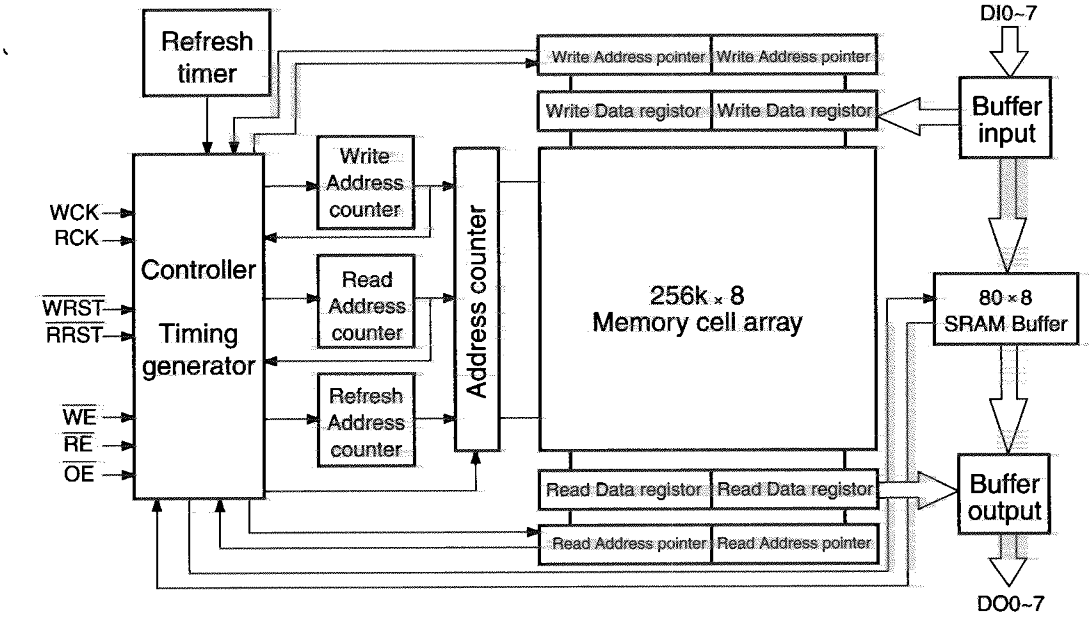
1.Terminal Layout


DI0 1
DI1 2
DI2 3
DI3 4
WE 5
GND 6
$\overline{TEST}$ 7
$\overline{WRST}$ 8
WCK 9
VDD 10
DI4 11
DI5 12
DI6 13
DI7 14
28 DO0
27 DO1
26 DO2
25 DO3
24 RE
23 GND
22 $\overline{OE}$
21 $\overline{RRST}$
20 RCK
19 VDD
18 DO4
17 DO5
16 DO6
15 DO7

2.Pin Function

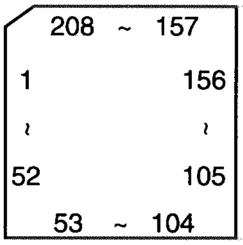
Pin No.	Symbol	I/O	Pin Function
1~4	DI0~3	I	Data input
5	WE	I	Write enable signal input
6	GND	-	Connect to GND
7	TEST	-	Connect to GND
8	$\overline{WRST}$	I	Write reset signal input
9	WCK	I	Write clock signal input
10	VDD	-	Power supply +5V
11~14	DI4~7	I	Data input
15~18	DO7~4	O	Data output
19	VDD	-	Power supply +5V
20	RCK	I	Read clock signal input
21	$\overline{RRST}$	I	Read reset signal input
22	$\overline{OE}$	-	Connect to GND
23	GND	-	Connect to GND
24	RE	I	Read enable signal input
25~28	DO3~0	O	Data output

3.Block Diagrams

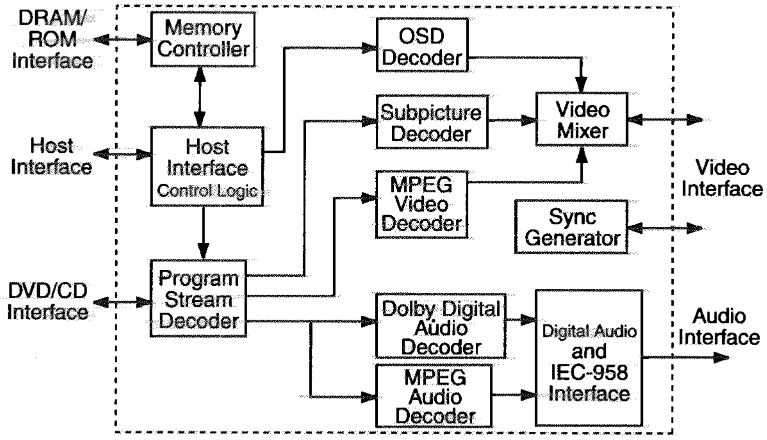

Refresh timer
Write Address pointer
Write Address pointer
Write Data registor
Write Data registor
DI0~7
Buffer input
WCK
RCK
$\overline{WRST}$
$\overline{RRST}$
$\overline{WE}$
$\overline{RE}$
$\overline{OE}$
Controller
Timing generator
Write Address counter
Read Address counter
Refresh Address counter
Address counter
256k × 8
Memory cell array
80 × 8
SRAM Buffer
Read Data registor
Read Data registor
Buffer output
Read Address pointer
Read Address pointer
DO0~7

■ZIVA3-PA1(IC501):AV DECODER

1.Terminal Layout


208 ~ 157
1
156
52
105
53 ~ 104

2.Block Diagrams


DRAM/ ROM Interface
Memory Controller
OSD Decoder
Host Interface
Host Interface Control Logic
Subpicture Decoder
Video Mixer
MPEG Video Decoder
Video Interface
Sync Generator
DVD/CD Interface
Program Stream Decoder
Dolby Digital Audio Decoder
Digital Audio and IEC-958 Interface
Audio Interface
MPEG Audio Decoder

3.Pin Function (1/3)

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	TEST PINO	-	Test pin	26	ARAM-DATA5	I/O	Non used
2	HDATA0	I/O	System control data I/O (IC301)	27	E-VDD	-	Power supply
3	HDATA1	I/O	System control data I/O (IC301)	28	ARAM-DATA6	I/O	Non used
4	HDATA2	I/O	System control data I/O (IC301)	29	E-VSS	-	Connect to GND
5	E-VDD	-	Power supply	30	ARAM-DATA7	I/O	Non used
6	HDATA3	I/O	System contorl data I/O (IC301)	31	ARAM-ADDR0	-	Connect to TP550
7	E-VSS	-	Connect to GND	32	ARAM-ADDR1	-	Connect to TP551
8	HDATA4	I/O	System control data I/O (IC301)	33	ARAM-ADDR2	-	Connect to TP552
9	HDATA5	I/O	System control data I/O (IC301)	34	ARAM-ADDR3	-	Connect to TP553
10	HDATA6	I/O	System control data I/O (IC301)	35	ARAM-ADDR4	-	Connect to TP554
11	HDATA7	I/O	System control data I/O (IC301)	36	E-VDD	-	Power supply
12	I-VDD	-	Power supply	37	ARAM-ADDR5	-	Connect to TP555
13	$\overline{\text{RST}}$	I	Reset signal input	38	E-VSS	-	Connect to GND
14	I-VSS	-	Connect to GND	39	ARAM-ADDR6	-	Connect to TP556
15	$\overline{\text{WAIT}}$	I	Wait control for IC509	40	I-VDD	-	Power supply
16	$\overline{\text{INT}}$	O	Host interrupt output for ATAPI	41	ARAM-ADDR7	-	Connect to TP557
17	E-VDD	-	Power supply	42	I-VSS	-	Connect to GND
18	$\overline{\text{ARAM-OE}}$	-	Connect to TP540	43	ARAM-ADDR8	-	Connect to TP558
19	E-VSS	-	Connect to GND	44	ARAM-ADDR9	-	Connect to TP559
20	$\overline{\text{ARAM-WE}}$	-	Connect to TP541	45	ARAM-ADDR10	-	Connect to TP560
21	ARAM-DATA0	I/O	Non used	46	ARAM-ADDR11	-	Connect to TP561
22	ARAM-DATA1	I/O	Non used	47	E-VDD	-	Power supply
23	ARAM-DATA2	I/O	Non used	48	ARAM-ADDR12	-	Connect to TP562
24	ARAM-DATA3	I/O	Non used	49	E-VSS	-	Connect to GND
25	ARAM-DATA4	I/O	Non used	50	ARAM-ADDR13	-	Connect to TP563

Pin Function (2/3)

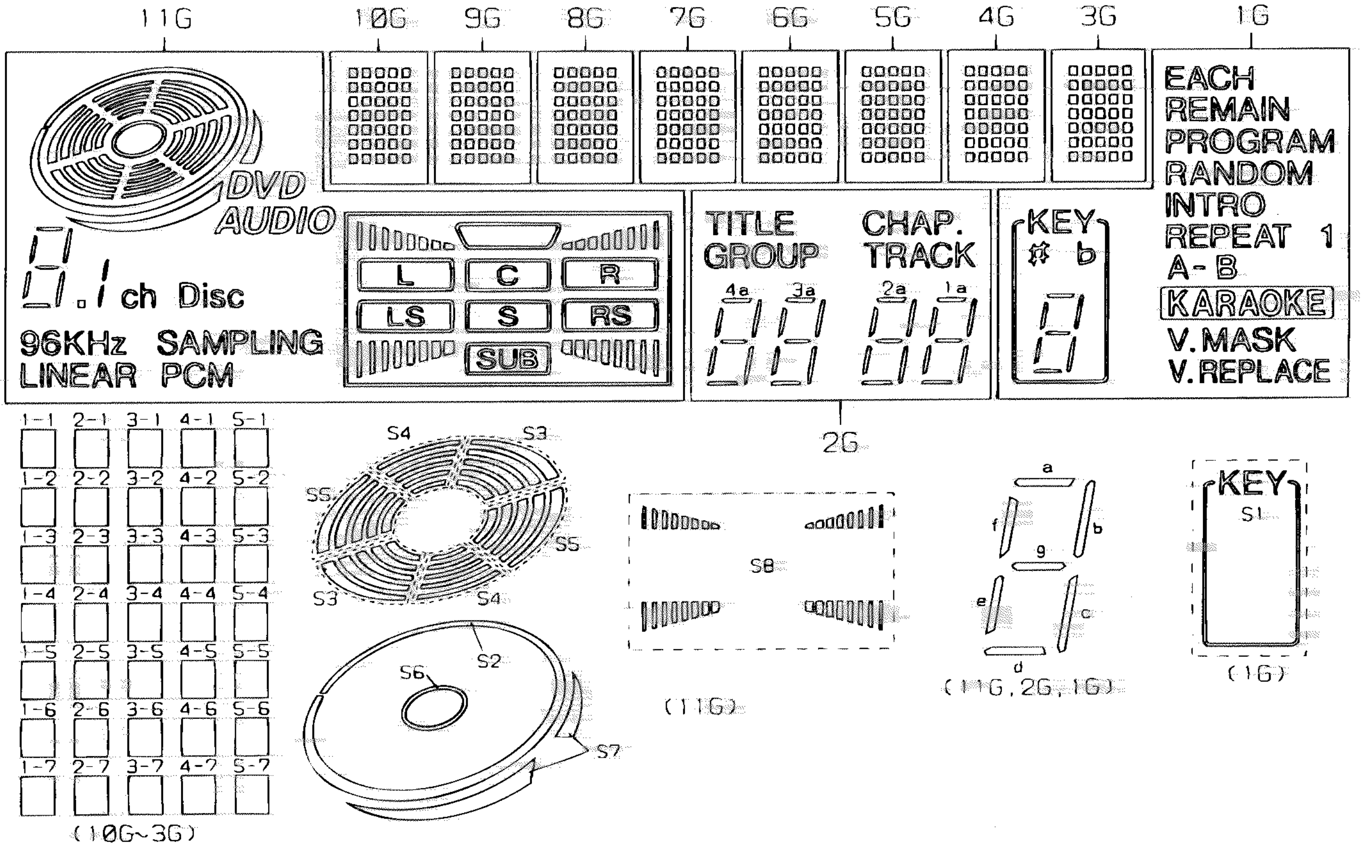
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
51	ARAM-ADDR14	-	Connect to TP564	97	E-VSS	-	Connect to GND
52	TEST-PIN1	-	Test pin	98	M-ADDR11	O	Address output to IC508,504
53	M-DATA15	I/O	Data bus I/O to IC508,IC504	99	M-ADDR8	O	Address output to IC508,504
54	M-DATA0	I/O	Data bus I/O to IC508,IC504	100	M-ADDR10	O	Address output to IC508,504
55	E-VDD	-	Power supply	101	E-VDD	-	Power supply
56	M-DATA14	I/O	Data bus I/O to IC508,IC504	102	M-ADDR7	O	Address output to IC508,504
57	E-VSS	-	Connect to GND	103	E-VSS	-	Connect to GND
58	M-DATA1	I/O	Data bus I/O to IC508,IC504	104	M-ADDR0	O	Address output to IC508,504
59	M-DATA13	I/O	Data bus I/O to IC508,IC504	105	M-ADDR6	O	Address output to IC508,504
60	M-DATA2	I/O	Data bus I/O to IC508,IC504	106	M-ADDR1	O	Address output to IC508,504
61	E-VDD	-	Power supply	107	E-VDD	-	Power supply
62	M-DATA12	I/O	Data bus I/O to IC508,IC504	108	M-ADDR5	O	Address output to IC508,504
63	E-VSS	-	Connect to GND	109	E-VSS	-	Connect to GND
64	M-DATA3	I/O	Data bus I/O to IC508,IC504	110	M-ADDR2	O	Address output to IC508,504
65	I-VDD	-	Power supply	111	M-ADDR4	O	Address output to IC508,504
66	M-DATA11	I/O	Data bus I/O to IC508,IC504	112	M-ADDR3	O	Address output to IC508,504
67	I-VSS	-	Connect to GND	113	E-VDD	-	Power supply
68	M-DATA14	I/O	Data bus I/O to IC508,IC504	114	M-ADDR12	-	Connect to TP513
69	E-VDD	-	Power supply	115	E-VSS	-	Connect to GND
70	M-DATA10	I/O	Data bus I/O to IC508,IC504	116	M-ADDR13	-	Connect to TP514
71	E-VSS	-	Connect to GND	117	I-VDD	-	Power supply
72	M-DATA5	I/O	Data bus I/O to IC508,IC504	118	M-ADDR14	-	Connect to TP515
73	M-DATA9	I/O	Data bus I/O to IC508,IC504	119	I-VSS	-	Connect to GND
74	M-DATA6	I/O	Data bus I/O to IC508,IC504	120	M-ADDR15	-	Connect to TP516
75	E-VDD	-	Power supply	121	M-ADDR16	-	Connect to TP517
76	M-DATA8	I/O	Data bus I/O to IC508,IC504	122	M-ADDR17	-	Connect to TP518
77	E-VSS	-	Connect to GND	123	E-VDD	-	Power supply
78	M-DATA7	I/O	Data bus I/O to IC508,IC504	124	M-ADDR18	-	Connect to TP519
79	LDQM	O	Lower DQ mask enable	125	E-VSS	-	Connect to GND
80	UDQM	O	Upper DQ mask enable	126	M-ADDR19	-	Connect to TP520
81	E-VDD	-	Power supply	127	M-ADDR20	-	Connect to TP521
82	MWE	O	Write enable	128	ROM-CS	-	Connect to TP522
83	E-VSS	-	Connect to GND	129	TEST-PIN2	-	Test pin
84	SD-CLK	O	System clock signal output	130	OSD-CLK	-	Connect to TP523
85	SD-CAS	O	column address strobe	131	OSD-DATA0	-	Connect to TP525
86	SD-RAS	O	Row address strobe	132	OSD-DATA1	-	Connect to TP526
87	E-VDD	-	Power supply	133	TEST-PIN3	-	Test pin
88	SD-CS1	O	Chip select output to IC508	134	E-VDD	-	Power supply
89	E-VSS	-	Connect to GND	135	OSD-DATA2	-	Connect to TP528
90	SD-CSO	O	Chip select output to IC504	136	E-VSS	-	Connect to GND
91	I-VDD	-	Power supply	137	OSD-DATA3	-	Connect to TP529
92	EDO-CAS	-	Connect to TP511	138	TEST-PIN4	-	Test pin
93	I-VSS	-	Connect to GND	139	OSD-BLK1	-	Connect to TP531
94	EDO-RAS	-	Connect to TP512	140	OSDVC1	-	Connect to TP532
95	E-VDD	-	Power supply	141	TEST-PIN5	-	Test pin
96	M-ADDR9	O	Address output to IC508,504	142	VDATA0	O	DVD image signal output

Pin Function (3/3)

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
143	VDATA1	O	DVD image signal output	176	A-VDD	-	Connect to TP507
144	I-VDD	-	Power supply	177	VCLK	I/O	Dot clock signal output (27MHz)
145	VDATA2	O	DVD image signal output	178	SYSCLK	-	Connect to TP505
146	I-VSS	-	Connect to GND	179	A-VSS	-	Connect to GND
147	TEST-PIN6	-	Test pin	180	DVD-DATA0	I	ATAPI data I/O to IC301
148	VDATA3	O	DVD image signal output	181	E-VDD	-	Power supply
149	E-VDD	-	Power supply	182	DVD-DATA1	I	ATAPI data I/O to IC301
150	VDATA4	O	DVD image signal output	183	E-VSS	-	Connect to GND
151	E-VSS	-	Connect to GND	184	DVD-DATA2	I	ATAPI data I/O to IC301
152	VDATA5	O	DVD image signal output	185	DVD-DATA3	I	ATAPI data I/O to IC301
153	TEST-PIN7	-	Test pin	186	DVD-DATA4	I	ATAPI data I/O to IC301
154	VDATA6	O	DVD image signal output	187	DVD-DATA5	I	ATAPI data I/O to IC301
155	VDATA7	O	DVD image signal output	188	DVD-DATA6	I	ATAPI data I/O to IC301
156	TEST-PIN8	-	Test pin	189	DVD-DATA7	I/O	ATAPI data I/O to IC301
157	$\overline{\text{HSYNC}}$	I/O	Horizontal synchronous signal output	190	TEST-PIN10	-	Test pin
158	$\overline{\text{VSYNC}}$	I/O	Vertical synchronous signal output	191	V-REQUEST	O	Master/Sleave Selection for ATAPI
159	IEC-958	O	Digital audio data output	192	V-STROBE	I	Host address for ATAPI
160	E-VDD	-	Power supply	193	I-VDD	-	Power supply
161	DA-DATA0	O	Data output to IC702	194	A-REQUEST	-	Connect to TP539
162	E-VSS	-	Connect to GND	195	I-VSS	-	Connect to GND
163	DA-DATA1	O	Data output to IC702	196	V-DACK	I	Host interrupt input for ATAPI
164	DA-DATA2	O	Data output to IC702	197	E-VDD	-	Power supply
165	DA-DATA3	O	Data output to IC702	198	SECT-SYNC	I	Host write for ATAPI
166	DA-LRCK	O	L/R clock output to IC702	199	E-VSS	-	Connect to GND
167	DA-BCK	O	Bit clock output to IC702	200	ERROR	-	Connect to GND
168	I-VDD	-	Power supply	201	HOST-SEL	-	Connect to GND
169	DA-XCK	-	Non connect	202	HADDR0	I	System control address input
170	I-VSS	-	Connect to GND	203	HADDR1	I	System control address input
171	DAI-DATA	-	Connect to TP501	204	HADDR2	I	System control address input
172	DAI-LRCK	I	L/R clock input from IC702	205	DTACK-SEL	-	Connect to GND
173	DAI-BCK	I	Bit clock input from IC702	206	$\overline{\text{CS}}$	I	Chip select for ZIVA
174	TEST-PIN9	-	Test pin	207	$\overline{\text{R/W}}$	I	Write enable
175	CLK-SEL	-	Connect to GND	208	$\overline{\text{RD}}$	I	Read enable

Internal connections for FL display

■QLF0049-001(DI831):FL DISPLAY TUBE


11G
10G
9G
8G
7G
6G
5G
4G
3G
1G
DVD
AUDIO
ch Disc
96KHz SAMPLING
LINEAR PCM
L
C
R
LS
S
RS
SUB
TITLE
GROUP
CHAP.
TRACK
4a
3a
2a
1a
KEY
♯ b
EACH
REMAIN
PROGRAM
RANDOM
INTRO
REPEAT 1
A-B
KARAOKE
V.MASK
V.REPLACE
2G
1-1 2-1 3-1 4-1 5-1
1-2 2-2 3-2 4-2 5-2
1-3 2-3 3-3 4-3 5-3
1-4 2-4 3-4 4-4 5-4
1-5 2-5 3-5 4-5 5-5
1-6 2-6 3-6 4-6 5-6
1-7 2-7 3-7 4-7 5-7
(10G~3G)
S4
S3
S5
S5
S3
S4
S6
S2
S7
S8
(11G)
a
f
b
g
e
c
d
(1G,2G,1G)
KEY
S1
(1G)

PIN CONNECTION

PIN NO.	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56
CONNECTION	F-	F-	F-	NP	NP	NC	NC	NC	NC	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	IC	NP	NP	F+	F+	F+

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
CONNECTION	F-	F-	F-	NP	NP	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	P35	P34	P33	P32	P31	P30	P29	P28	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	IC	NP	NP	F+	F+	F+

NOTE
1) F-, F+ ---- Filament
2) NP ------- No Pin
3) NC ------- No connection
4) DL ------- Datum Line
5) 1G~11G ---- Grid
6) IC ------- Internal connection

ANODE CONNECTION

	11G	10G~3G	2G	1G
P1	S2	1-1	4d	–
P2	S3	2-1	4e	–
P3	S4	3-1	4c	–
P4	S5	4-1	4g	–
P5	S6	5-1	4f	–
P6	S7	1-2	4b	–
P7	DVD	2-2	4a	–
P8	AUDIO	3-2	3d	–
P9	a	4-2	3e	–
P10	b	5-2	3c	–
P11	f	1-3	3g	–
P12	g	2-3	3f	–
P13	c	3-3	3b	–
P14	e	4-3	3a	V.REPLACE
P15	d	5-3	2d	d
P16	. /	1-4	2e	e
P17	96KHz SAMPLING	2-4	2c	c
P18	LINER PCM	3-4	2g	g

	11G	10G~3G	2G	1G
P19	ch	4-4	2f	f
P20	Disc	5-4	2b	b
P21	SUB	1-5	2a	a
P22	S	2-5	1d	V.MASK
P23	LS	3-5	1e	♯
P24	L	4-5	1c	♭
P25	C	5-5	1g	S1
P26	⏢	1-6	1f	KARAOKE
P27	RS	2-6	1b	A –
P28	R	3-6	1a	B
P29	S8	4-6	TRACK	1
P30	▭	5-6	GROUP	REPEAT
P31	–	1-7	CHAP.	INTRO
P32	–	2-7	TITLE	RANDOM
P33	–	3-7	–	PROGRAM
P34	–	4-7	–	REMAIN
P35	–	5-7	–	EACH

Precautions for service

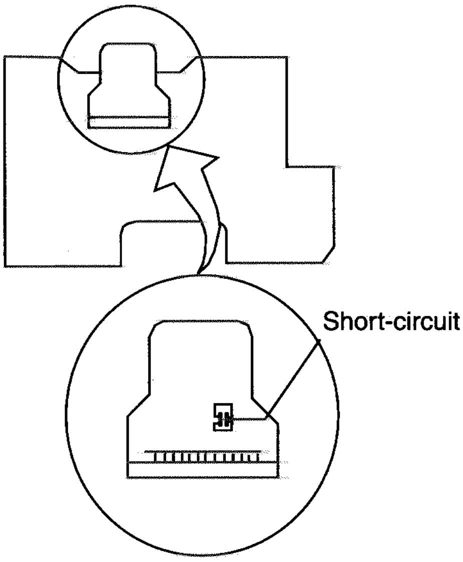
Handling of Traverse Unit and Laser Pickup

1. Do not touch any peripheral element of the pickup or the actuator.
2. The traverse unit and the pickup are precision devices and therefore must not be subjected to strong shock.
3. Do not use a tester to examine the laser diode. (The diode can easily be destroyed by the internal power supply of the tester.)
4. To replace the traverse unit, pull out the metal short pin for protection from charging.
5. When replacing the pickup, after mounting a new pickup, remove the solder on the short land which is provided at the center of the flexible wire to open the circuit.
6. Half-fixed resistors for laser power adjustment are adjusted in pairs at shipment to match the characteristics of the optical block.
   Do not change the setting of these half-fixed resistors for laser power adjustment.

Destruction of Traverse Unit and Laser Pickup by Static Electricity

Laser diodes are easily destroyed by static electricity charged on clothing or the human body. Before repairing peripheral elements of the traverse unit or pickup, be sure to take the following electrostatic protection:

1. Wear an antistatic wrist wrap.
2. With a conductive sheet or a steel plate on the workbench on which the traverse unit or the pick up is to be repaired, ground the sheet or the plate.
3. After removing the flexible wire from the connector (CN101), short-circuit the flexible wire by the metal clip.
4. Short-circuit the laser diode by soldering the land which is provided at the center of the flexible wire for the pickup.
   After completing the repair, remove the solder to open the circuit.



Disassembly method

< Main body >

■Removing the Top Cover (See Fig.1)

1. Remove the four screws "A" attaching the top cover on both sides of the body.
2. Remove the two screws "B" attaching the top cover on the rear body.
3. Remove the top cover upward from the rear body while pulling lower parts of the both sides of the top cover.

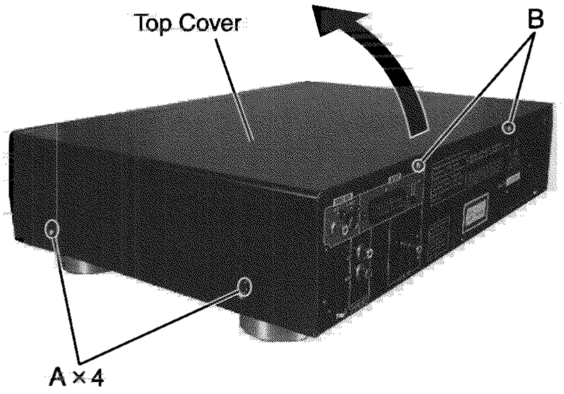

Top Cover
B
A×4

Fig. 1

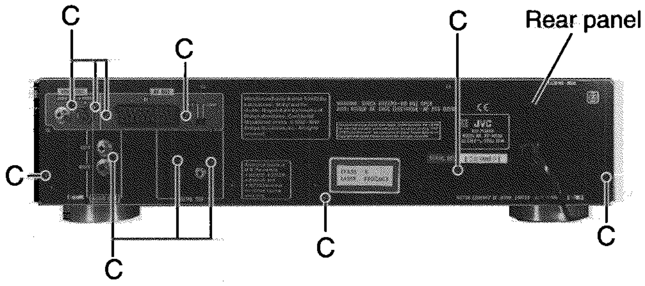

C
C
C
Rear panel
C
C
C
C
C

Fig. 2

■Removing the Rear Panel and Power Cable (See Fig.2 and 3)

1. Remove the top cover.
2. Remove the eleven screws "C" attaching the rear panel on
3. Remove the cable stopper fixing the power cable by using a tool like a nipper.
4. Unsolder the power cable on the regulator board, then remove the power cable.

Caution : When soldering the power cable on the regulator board again, make sure to wind the power cable on the terminals several times

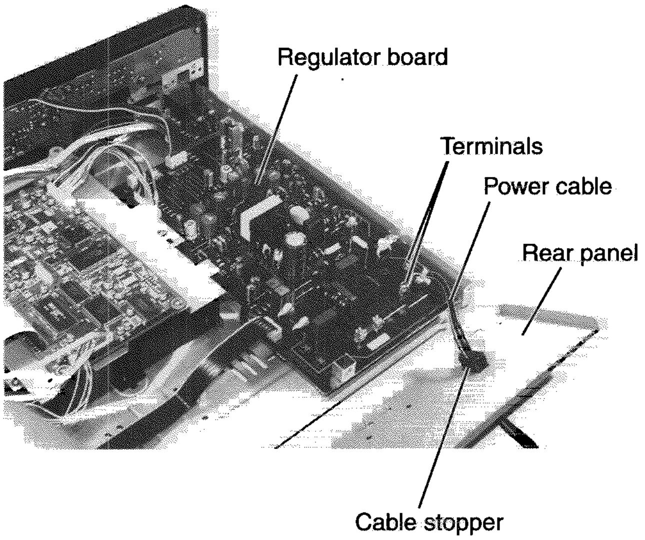

Regulator board
Terminals
Power cable
Rear panel
Cable stopper

Fig. 3

■Removing the Front Panel Assembly

(See Fig.4~6)

1. Remove the top cover.
2. Disconnect the harnesses connected to CN703 on the audio board and CN806 on the regulator board (Each harness is outgoing from the front panel assembly).
3. Disconnect connector CN851 on the headphone board.
4. Reverse the body, remove the three screws "D" fixing the front panel assembly.
5. Release joint "a" in the bottom side and two joint "b"s on both sides of the body, then remove the front panel assembly toward the front.

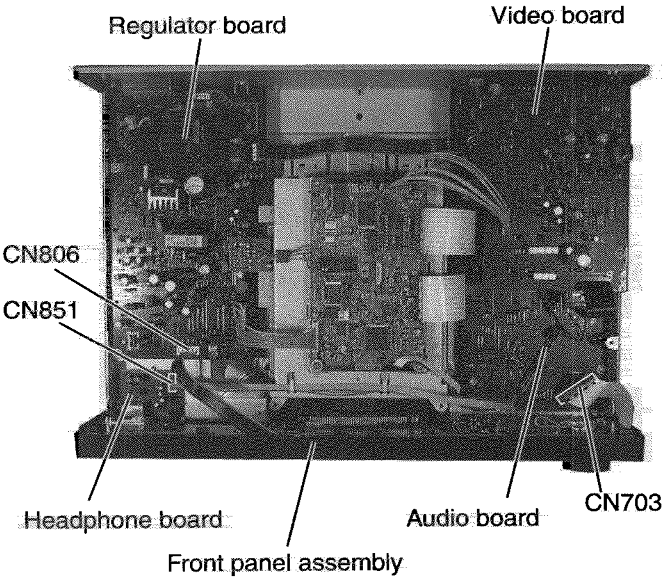

Regulator board
Video board
CN806
CN851
Headphone board
Front panel assembly
Audio board
CN703

Fig. 4

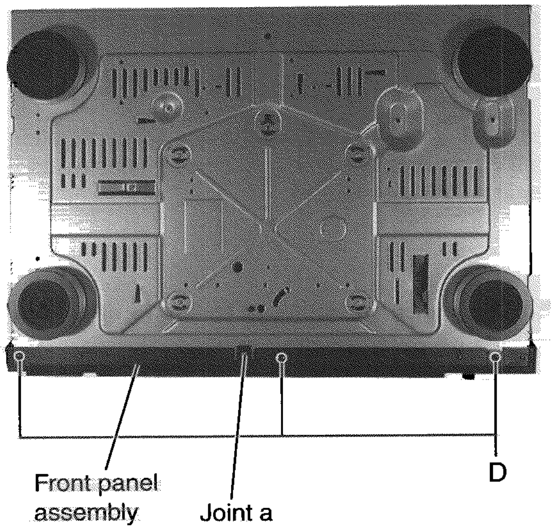

Front panel assembly
Joint a
D

Fig. 5

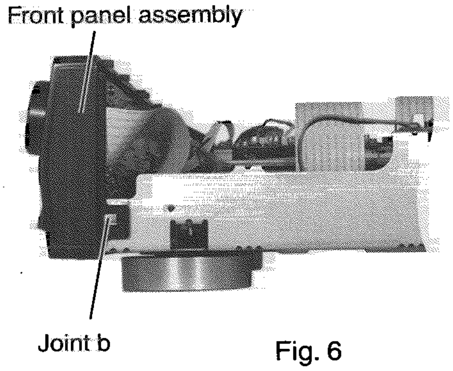

Front panel assembly
Joint b

Fig. 6

■Removing the DVD Mechanism (See Fig.7)

1. Remove the top cover.
2. Remove the front panel assembly.
3. Disconnect the harnesses connected to connector CN501,CN502 and CN503 on the servo control board on top of the DVD mechanism.
4. Release the two harnesses from the harness stopper "c"s on top of the DVD mechanism.
5. Remove the four screws "E" attaching the DVD mechanism.

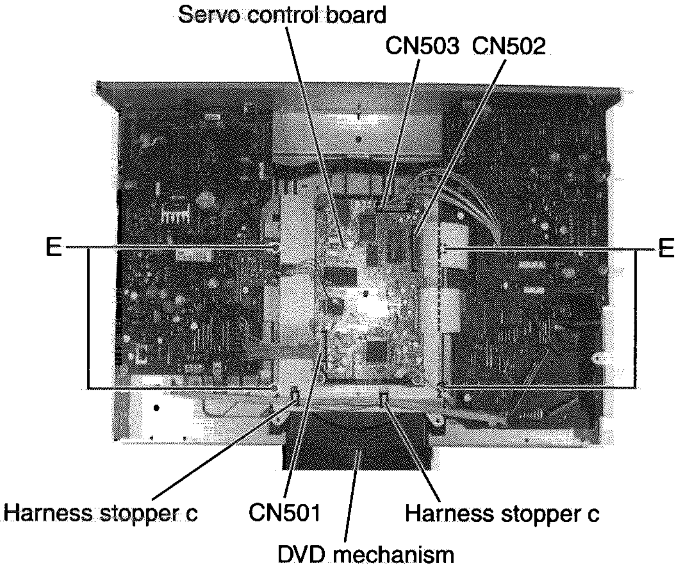

Servo control board
CN503
CN502
E
E
Harness stopper c
CN501
Harness stopper c
DVD mechanism

Fig. 7

■Removing the Servo Control (See Fig.7 and 8)

1. Remove the top cover.
2. Release the two harnesses from the harness stopper "c"s on top of the DVD mechanism (See Fig.7).
3. Disconnect the harnesses connected to connector CN501,CN502, CN503,CN101 and CN102 on the servo control board.
4. Remove the four screws "E" and one screw "F" attaching the DVD mechanism. Remove the servo control assembly from the DVD mechanism.

Sub board is installed as for a supplementary substrate on the way.

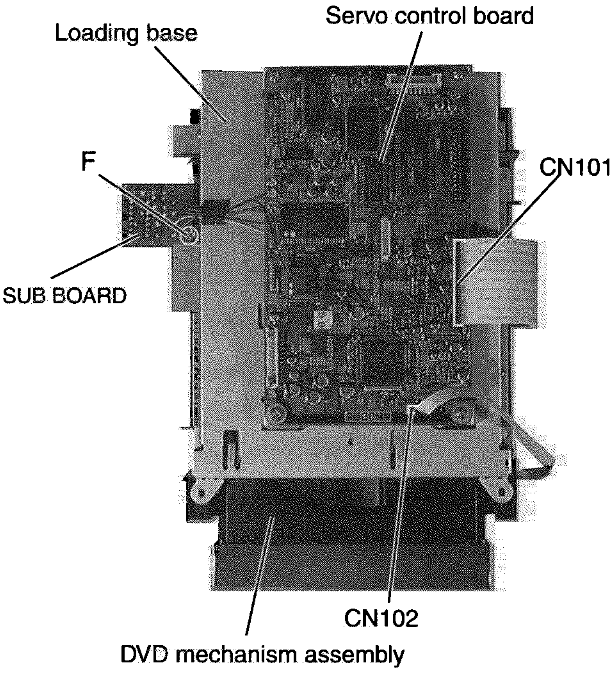

Loading base
Servo control board
F
CN101
SUB BOARD
CN102
DVD mechanism assembly

Fig. 8

■Removing the Regulator Board (See Fig.9)

※The regulator board can be detached without removing the front panel assembly.

1. Remove the top cover.
2. Remove the rear panel.
3. Disconnect the harnesses connected to connector CN801 and CN806 on the regulator board. As for the harness outgoing from CN805, disconnect it from connector CN501 on the servo control board.
4. Remove the three screws "G" attaching the regulator board.

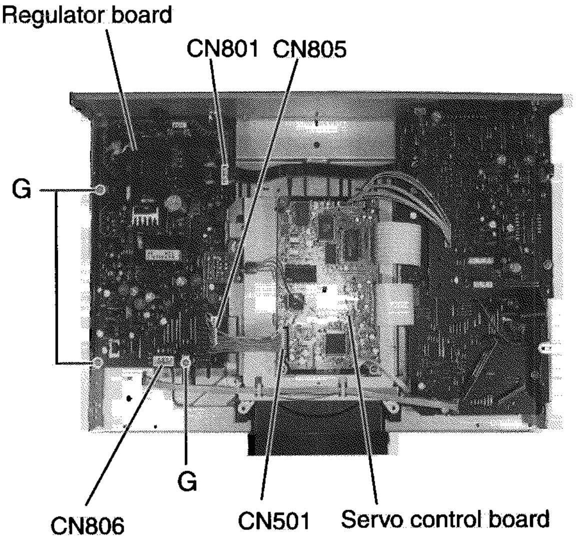

Regulator board
CN801
CN805
G
G
CN806
CN501
Servo control board

Fig. 9

■Removing the Video Board and Audio Board (See Fig.10)

※They can be detached without removing the front panel assembly.

1. Remove the top cover and rear panel.
2. Disconnect the connector and flat wire connected CN601,CN602 on the video board.
3. Disconnect the flat wire connected CN702 on the audio board.
4. Remove the one screw "H" attaching the video board.
5. Disconnect the connector CN704 on the audio board.
6. Disconnect the harnesses connected to connector CN701 and CN703 on the audio board.
7. Remove the three screws "I" attaching the audio board.

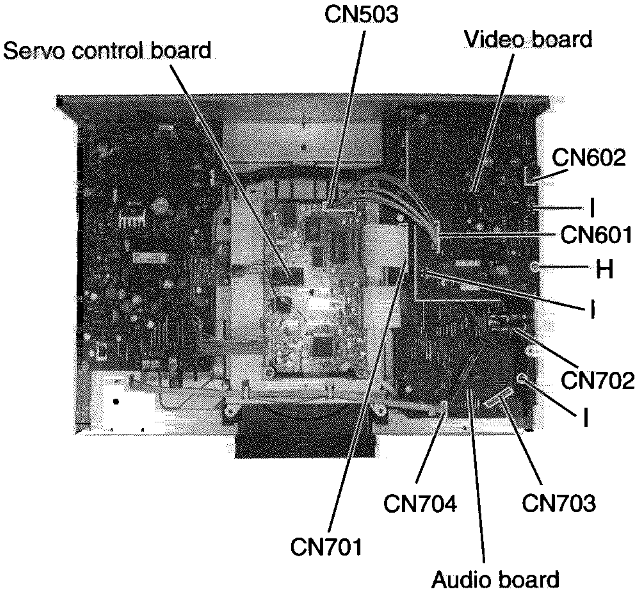

CN503
Servo control board
Video board
CN602
I
CN601
H
I
CN702
I
CN704
CN703
CN701
Audio board

Fig. 10

■Removing the Front Board and Headphone Board (See Fig.11~14)

1. Remove the top cover.
2. Remove the front panel assembly.
3. Pull out the headphone level knob toward the front.
4. Remove the three screws "J" attaching the headphone board assembly.
5. Pull out the shuttle knob toward the front, and remove the nut (See Fig.12).
6. Remove the twelve screws "K" attaching the front board, then disconnect the harness connected to connector CN834.
7. Turn CN832 and CN833 90 degrees as shown in the Fig.14, then remove the front board 1 and the front board 2.

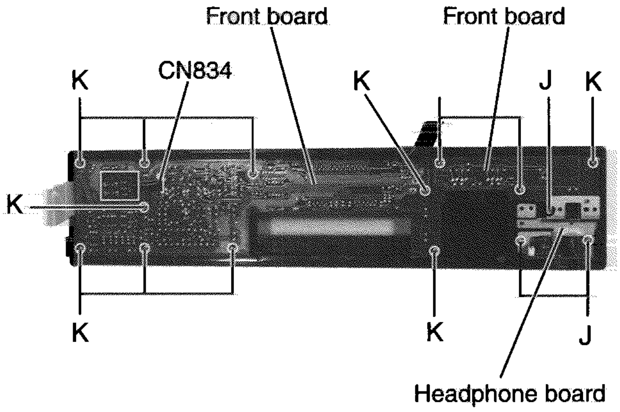

Front board
Front board
K
CN834
K
J
K
K
K
K
J
Headphone board

Fig. 11

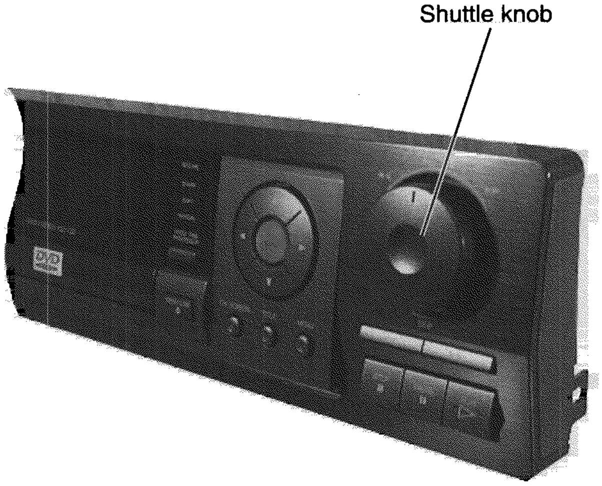

Shuttle knob

Fig. 12

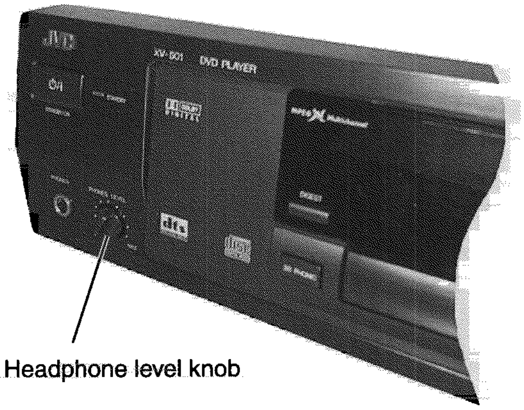

Headphone level knob

Fig. 13

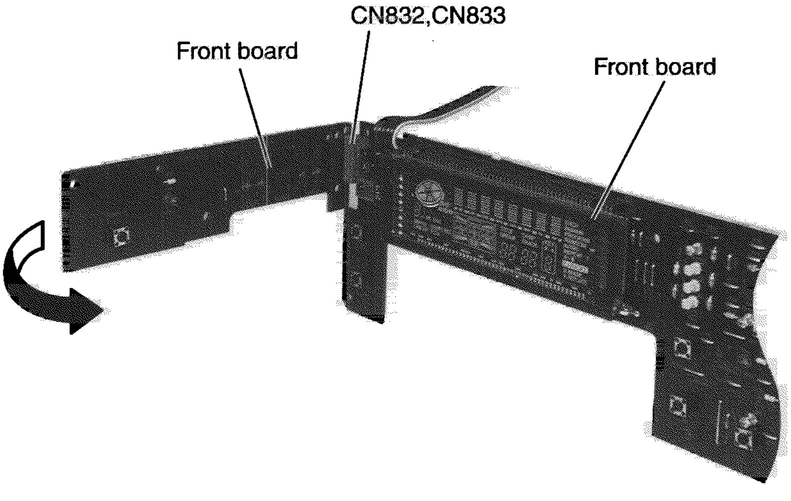

CN832,CN833
Front board
Front board

Fig. 14

< To eject the disc tray without turning on power >

(See Fig.15 and 16)

1. Turn over the body, and shift a part of the rotary cam on the bottom of the loading base to "TRAY OPEN" as shown in the Fig.15 by using a tool like a pincette.
2. Pull out the disc tray toward the front.

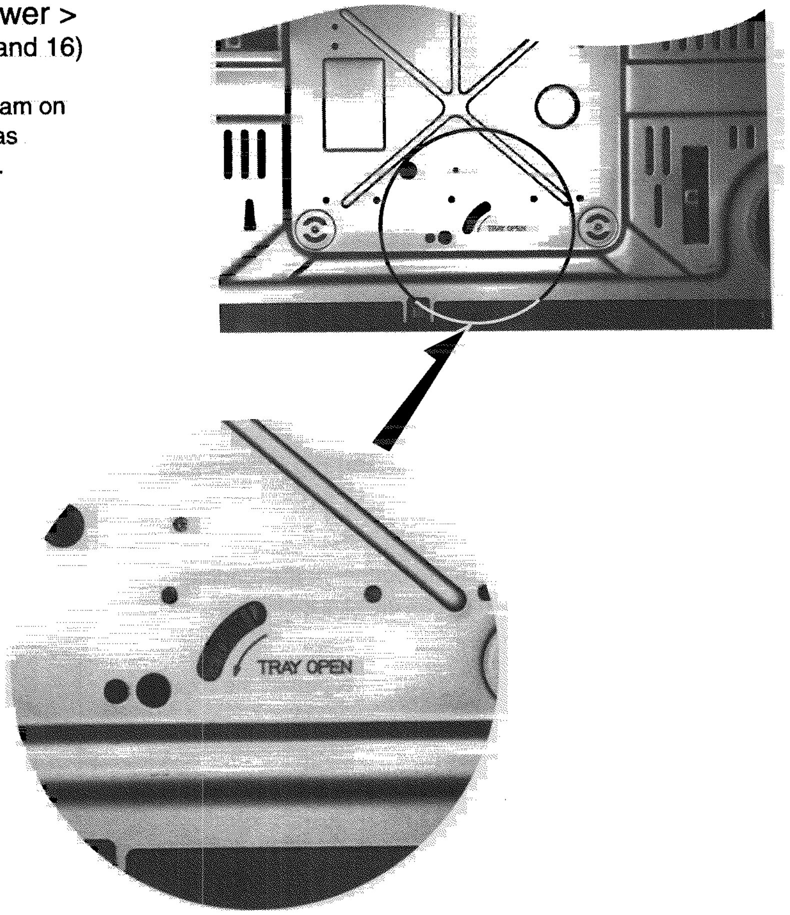


Fig. 15

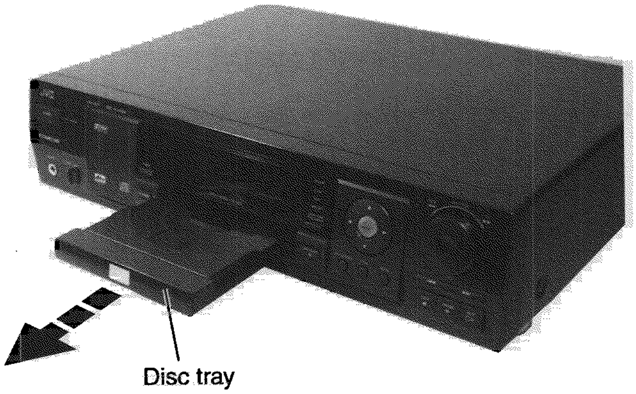


Fig. 16

< Removal of DVD Mechanism Assembly >

■Removing the Clamper Base (See Fig.1)

1. Remove the top cover.
2. Remove the DVD mechanism assembly.
3. Remove the four screws ① attaching the clamper base.

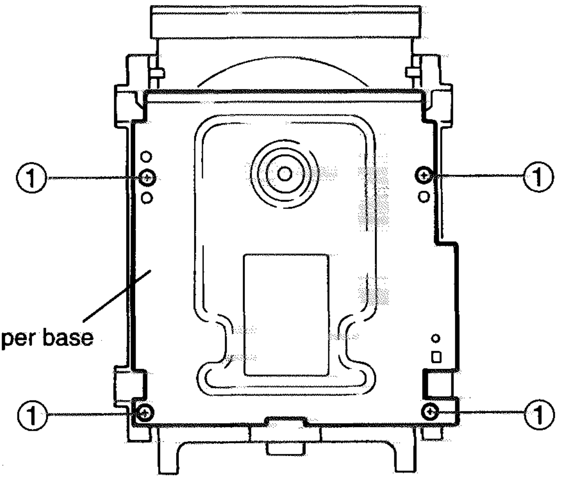

①
①
Clamper base
①
①

Fig. 1

■Removing the Loading Tray (See Fig.2 to Fig. 5)

1. Remove the clamper base.
2. Shift a part of the rotary cam in the bottom of the loading base to the tray opening position by using a tool like a tweezers.

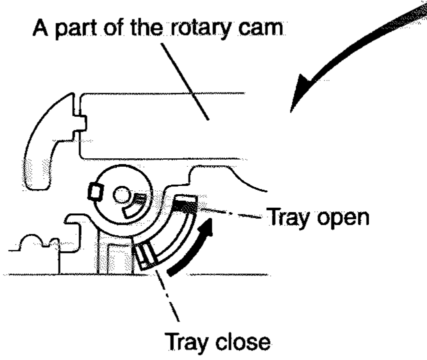

A part of the rotary cam
Tray open
Tray close

Fig. 3

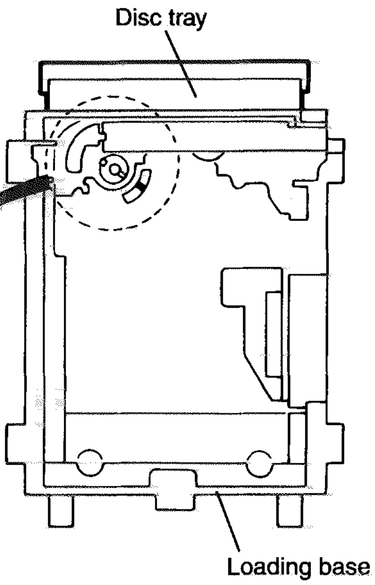

Disc tray
Loading base

Fig. 2

3. Draw the tray to the opening position.
4. Release the tray lock on both sides of the loading base, then pull out the tray.

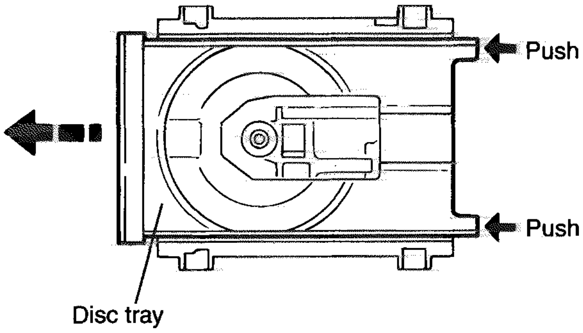

Push
Push
Disc tray

Fig. 4

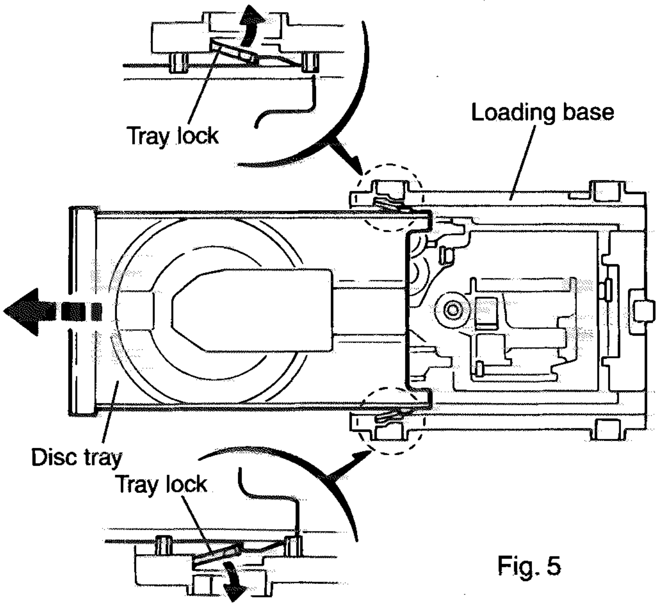

Tray lock
Loading base
Disc tray
Tray lock

Fig. 5

■Removing the Traverse Unit (See Fig.6)

1. Remove the disc tray.
2. Loosen the four screws ② attaching the traverse unit, and remove them together with the chassis stoppers / chassis holders.
3. Lift the rear part of the traverse unit (the leaf spring side), then remove the unit slowly while paying attention to the part connected to the rotary cam.

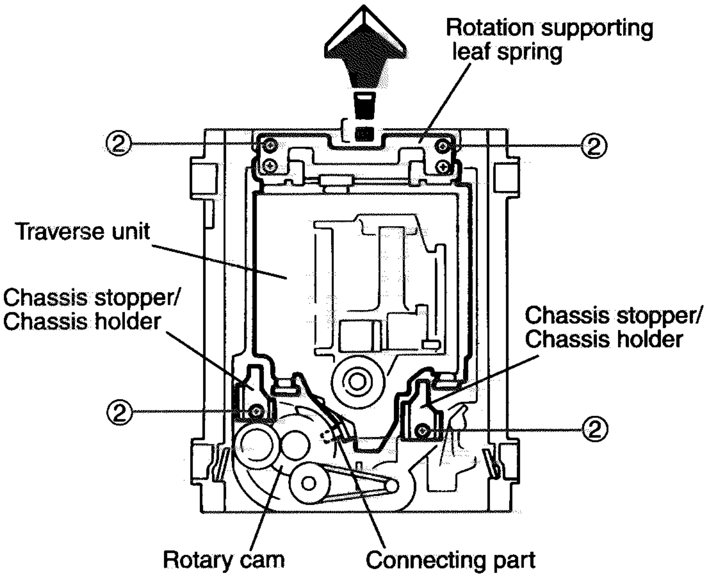

Rotation supporting leaf spring
②
②
Traverse unit
Chassis stopper/ Chassis holder
Chassis stopper/ Chassis holder
②
②
Rotary cam
Connecting part

Fig. 6

■Removing the Pickup Control Board (See Fig.7 and Fig.8)

1. Remove the traverse unit.
2. Remove the two screws ③ attaching the pickup control board on the bottom of the traverse unit.

   Caution: Solder the pattern on the flexible harness to prevent static electricity damage to the laser diode. After reassembling, unsolder the pattern.
3. Disconnect the harness from connector FP0001 on the pickup control board, and card wire from connector FP0003, the harnesses from P0004 and P0005 respectively (To disconnect FP0001, open the lock as shown in Fig.8.).

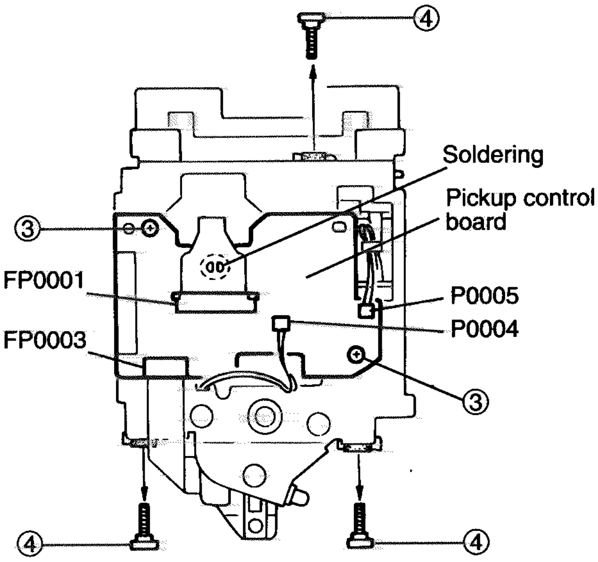

④
Soldering
Pickup control board
③
FP0001
P0005
FP0003
P0004
③
④
④

Fig. 7

■Removing the Chassis Flame (See Fig.7)

1. Remove the traverse unit.
2. Remove the pickup control board.
3. Remove the three screws ④ attaching the chassis flame and the damper.

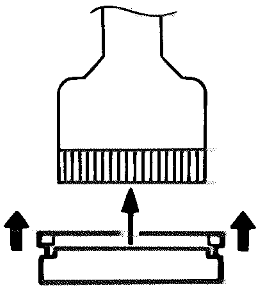


Fig. 8

■ Removing the Turn Table / Spindle Motor Assembly

(See Fig.9)

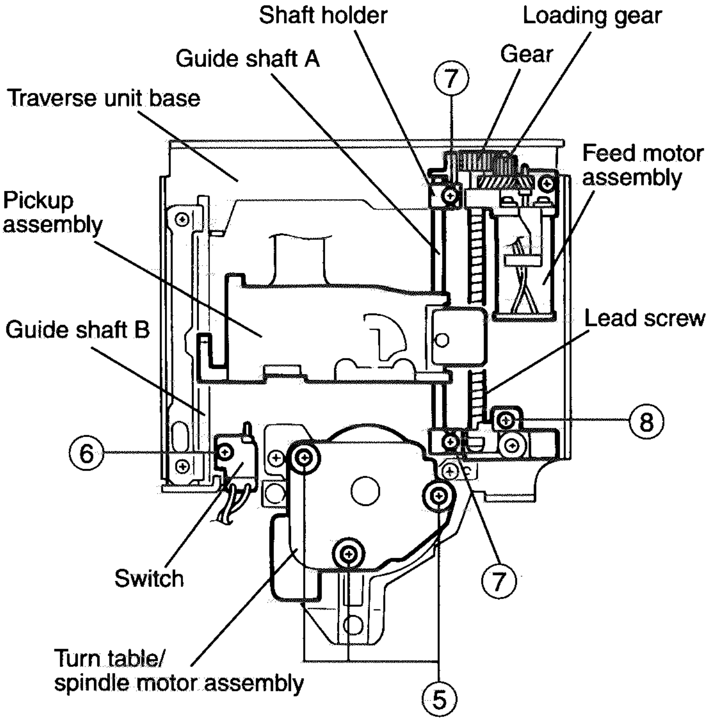
1. Remove the traverse unit.
2. Remove the pickup control board.
3. Remove the chassis flame.
4. Remove the three screws ⑤ attaching the turn table/ spindle motor assembly.

■ Removing the Switch (See Fig.9)

1. Remove the traverse unit.
2. Remove the pickup control board.
3. Remove the chassis flame.
4. Remove the screw ⑥ attaching the switch.

■ Removing the Pickup unit (See Fig.9)

1. Remove the traverse unit.
2. Remove the pickup control board.
3. Remove the chassis flame.
4. Loosen the two screws ⑦ attaching the shaft holder to fix the guide shaft A. Then, remove the screws ⑦ with the pickup unit while pulling out the pickup unit from the guide shaft B.



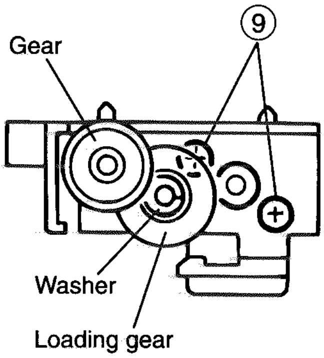
Shaft holder
Loading gear
Guide shaft A
Gear
⑦
Traverse unit base
Feed motor assembly
Pickup assembly
Guide shaft B
Lead screw
⑧
⑥
Switch
⑦
Turn table/ spindle motor assembly
⑤

Fig. 9

■ Removing the Feed Motor Assembly

(See Fig.9 and Fig.10)

1. Remove the traverse unit.
2. Remove the pickup control board.
3. Remove the chassis flame.
4. Remove the Pickup unit.
5. Remove the two screws ⑧ attaching the feed motor assembly, gear and lead screw.
6. Pull out the gear from the lead screw.
7. Remove the washer attaching the loading gear, then loading gear.
8. Remove the two screws ⑨ attaching the feed motor assembly.



⑨
Gear
Washer
Loading gear

Fig. 10

■Removing the Parts for Loading (See Fig.11)

1. Remove the clamper base.
2. Remove the disc tray.
3. The parts below can be removed without removing the traverse unit.

* Pull out each part after removing the washer or releasing the tab.
* pulley gear, belt, tray gear, rotary gear and rotary cam

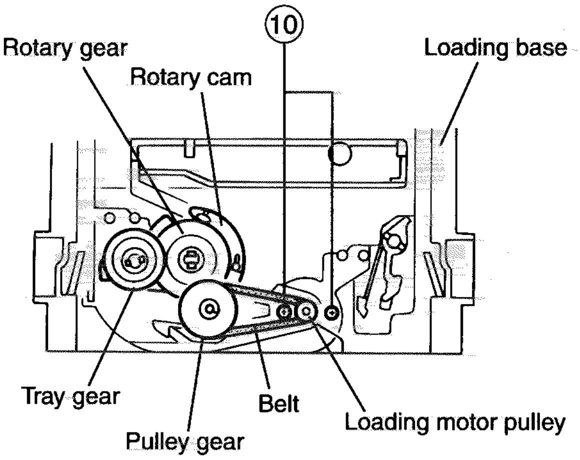

⑩
Rotary gear
Rotary cam
Loading base
Tray gear
Belt
Loading motor pulley
Pulley gear

Fig. 11

■Removing the Loading Motor Board
(See Fig.11 and Fig.12)

1. Remove the clamper base.
2. Remove the disc tray.
3. Remove the belt from the loading motor pulley on top of the loading base, then the two screws ⑩ attaching the loading motor.
4. Reverse the loading base, remove the screw ⑪ attaching the loading motor board and release tab A. Lift the loading motor board in the direction of the arrow to release tab B.

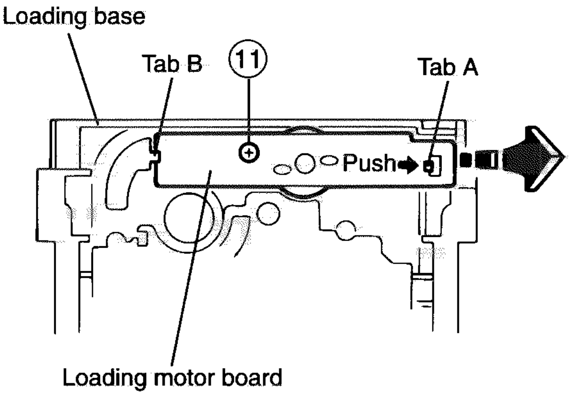

Loading base
Tab B
⑪
Tab A
Push
Loading motor board

Fig. 12

< Reassemble of the Loading Base >

■Reassembling the Parts for Loading (See Fig.11 and 12)

1. Attach the loading motor board, rotary cam, rotary gear, tray gear, pulley gear and belt in that order.

■Reassembling the Traverse Unit (See Fig.13 and 14)

1. Allow the flexible wire from traverse unit to extend out of the loading base.
2. Insert point C of the traverse unit into the groove of the rotary cam, then attach the unit.
3. Attach the four screw ⑫ with the chassis stopper and chassis holder, and tighten the screws.

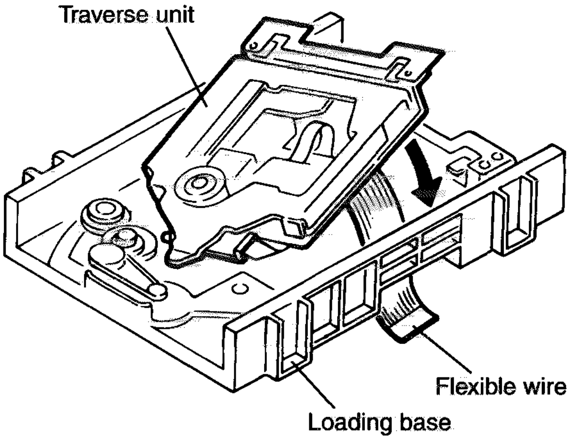

Traverse unit
Flexible wire
Loading base

Fig. 13

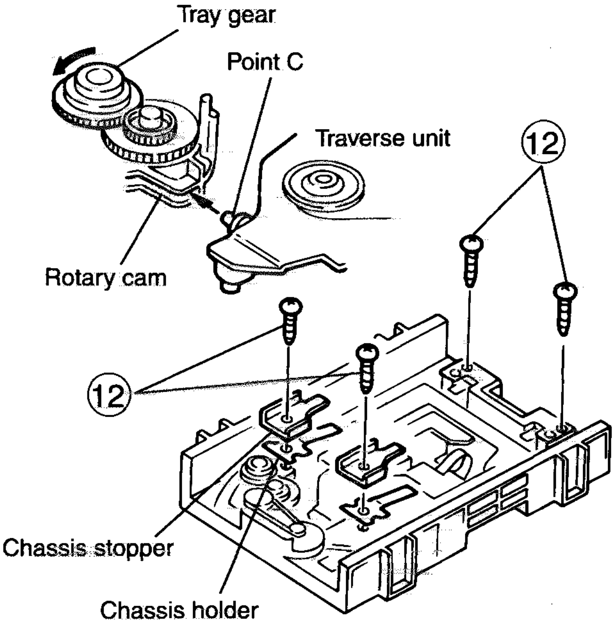

Tray gear
Point C
Traverse unit
⑫
Rotary cam
⑫
Chassis stopper
Chassis holder

Fig. 14

■Reassembling the Disc Tray (See Fig.15)

1. Turn the tray gear counterclockwise several times to move the traverse unit to the lowest position.
2. Push part D of the rotary cam in the direction of the arrow.
3. Make sure that the tab of the rotary cam is locked.
4. Insert the tray into the loading base horizontally.

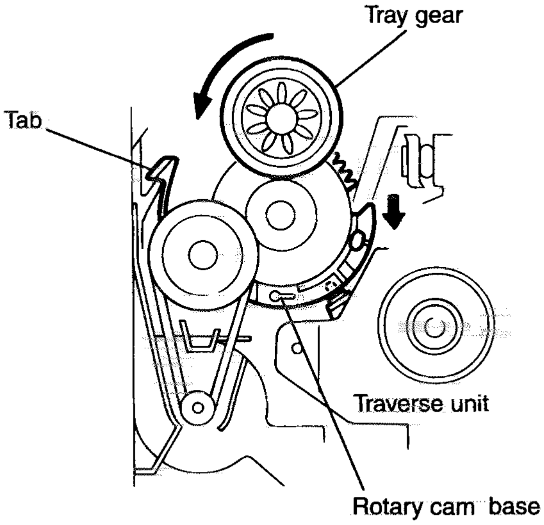

Tray gear
Tab
Traverse unit
Rotary cam base

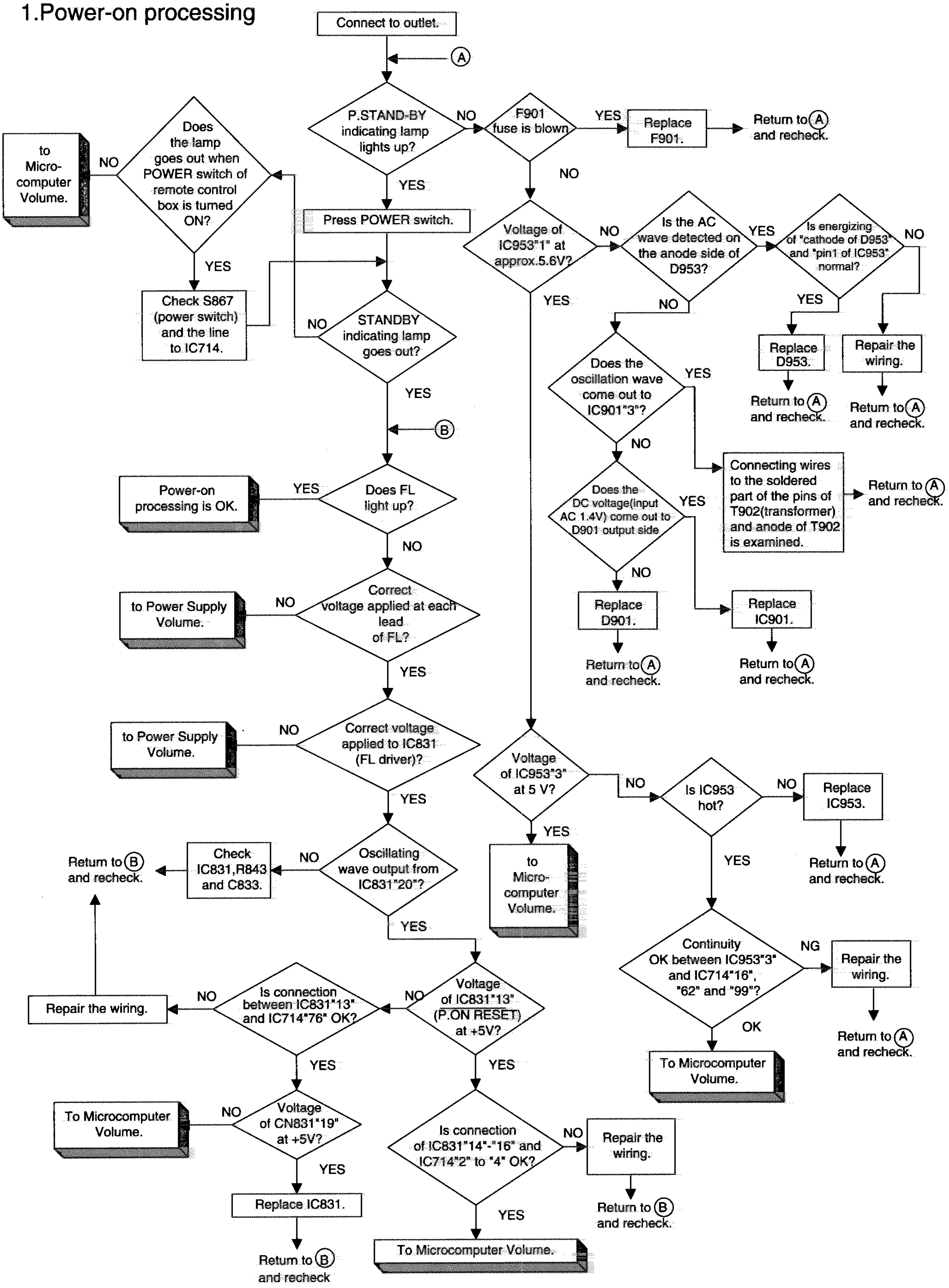
Fig. 15

■Reassembling the Loading Base Assembly (See Fig.1)

1. Attach the clamper base and tighten the four screws ①to fix it. Attach the loading base to the body.

Troubleshooting

1.Power-on processing


Connect to outlet.
A
P.STAND-BY indicating lamp lights up?
NO
F901 fuse is blown
YES
Replace F901.
Return to A and recheck.
NO
Voltage of IC953"1" at approx.5.6V?
NO
Is the AC wave detected on the anode side of D953?
YES
Is energizing of "cathode of D953" and "pin1 of IC953" normal?
NO
YES
Replace D953.
Return to A and recheck.
Repair the wiring.
Return to A and recheck.
NO
Does the oscillation wave come out to IC901"3"?
YES
Connecting wires to the soldered part of the pins of T902(transformer) and anode of T902 is examined.
Return to A and recheck.
NO
Does the DC voltage(input AC 1.4V) come out to D901 output side
YES
NO
Replace D901.
Return to A and recheck.
Replace IC901.
Return to A and recheck.
YES
Voltage of IC953"3" at 5 V?
NO
Is IC953 hot?
NO
Replace IC953.
Return to A and recheck.
YES
Continuity OK between IC953"3" and IC714"16", "62" and "99"?
NG
Repair the wiring.
Return to A and recheck.
OK
To Microcomputer Volume.
YES
to Micro-computer Volume.
YES
Press POWER switch.
Does the lamp goes out when POWER switch of remote control box is turned ON?
NO
to Micro-computer Volume.
YES
Check S867 (power switch) and the line to IC714.
NO
STANDBY indicating lamp goes out?
YES
B
Does FL light up?
YES
Power-on processing is OK.
NO
Correct voltage applied at each lead of FL?
NO
to Power Supply Volume.
YES
Correct voltage applied to IC831 (FL driver)?
NO
to Power Supply Volume.
YES
Oscillating wave output from IC831"20"?
NO
Check IC831,R843 and C833.
Return to B and recheck.
YES
Voltage of IC831"13" (P.ON RESET) at +5V?
NO
Is connection between IC831"13" and IC714"76" OK?
NO
Repair the wiring.
YES
Voltage of CN831"19" at +5V?
NO
To Microcomputer Volume.
YES
Replace IC831.
Return to B and recheck
YES
Is connection of IC831"14"-"16" and IC714"2" to "4" OK?
NO
Repair the wiring.
Return to B and recheck.
YES
To Microcomputer Volume.

2. Power Supply Volume

With all the wiring removed, check unit power board.

(1) Remove all flat wires and wire assemblies which are connected to CN801, CN805, CN806.
(2) Short-circuit CN805"4" (POWER ON:B168) and "5" (B5V:B167). (Set each regulator to ON.)
(3) The load resistance is connected between CN805"5"(B5V:B167) and "8,9"(D.GND:B164).
(4) Connect to the outlet and check the voltage at each part.
(For the voltage specification, see the wiring diagram.)

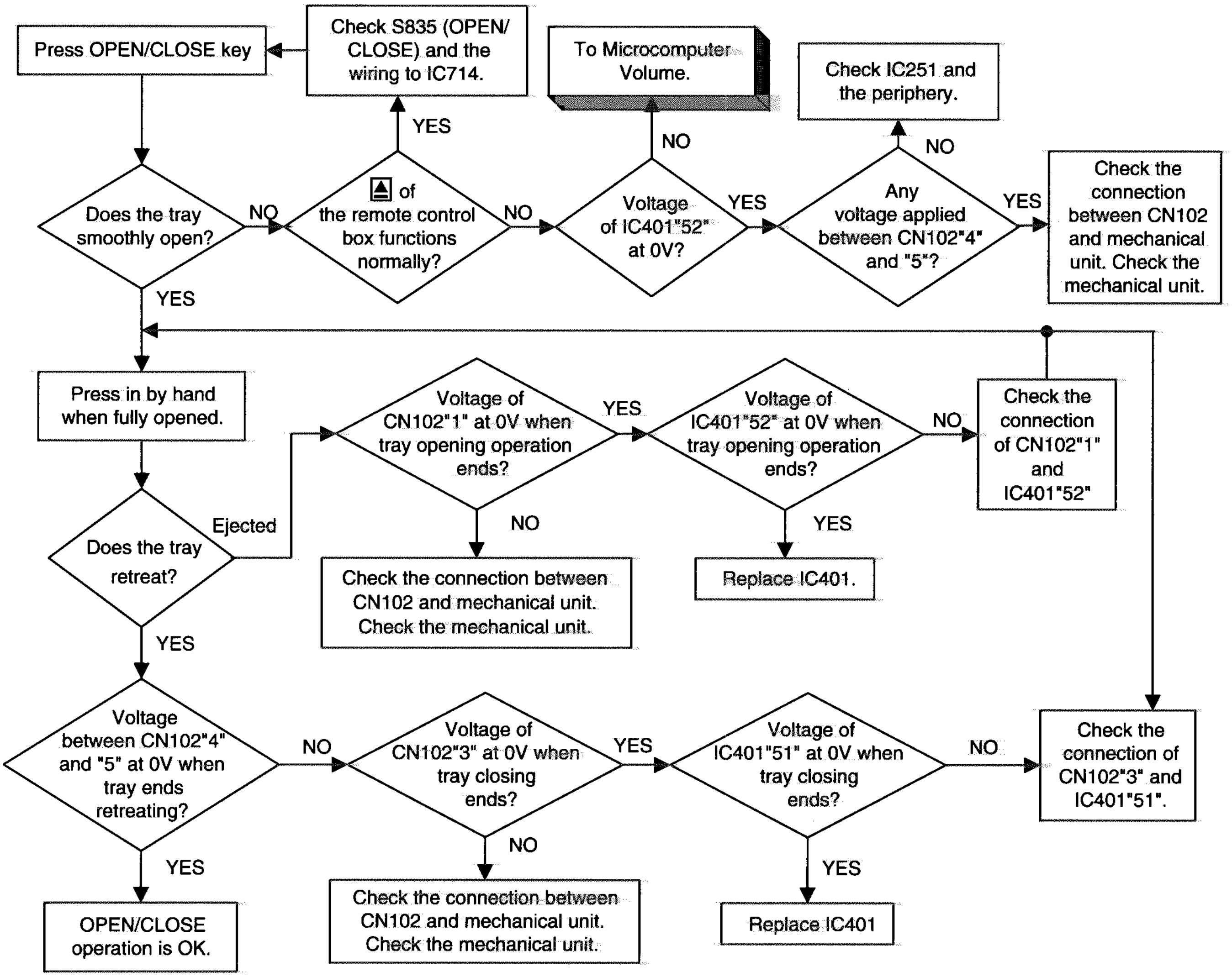
* If the load resistance is not connected, the voltage is not output to "B167".

Then restore the connection of CN801, CN805, CN806 and check voltage.

(1) Remove the wire short -circuiting CN805"4" and "5".
(2) Remove the load resistance.
(3) Restore the connection of CN801, CN805, CN806.
(4) Connect to the outlet.
(5) Turn the POWER switch on and check the voltage at each part.

If voltage abnormally drops when CN801, CN805, CN806 are connected (load is connected) though the voltage was at the normal level when CN801, CN805, CN806 were disconnected(load is connected), or if the protective element (fuse, etc.) is opened, the load which is supplied power may be defective or the wiring may be short-circuited.

3. Open/Close Operation


Press OPEN/CLOSE key
Check S835 (OPEN/ CLOSE) and the wiring to IC714.
To Microcomputer Volume.
Check IC251 and the periphery.
YES
NO
NO
Does the tray smoothly open?
NO
⏏ of the remote control box functions normally?
NO
Voltage of IC401"52" at 0V?
YES
Any voltage applied between CN102"4" and "5"?
YES
Check the connection between CN102 and mechanical unit. Check the mechanical unit.
YES
Press in by hand when fully opened.
Voltage of CN102"1" at 0V when tray opening operation ends?
YES
Voltage of IC401"52" at 0V when tray opening operation ends?
NO
Check the connection of CN102"1" and IC401"52"
Ejected
Does the tray retreat?
NO
YES
Check the connection between CN102 and mechanical unit. Check the mechanical unit.
Replace IC401.
YES
Voltage between CN102"4" and "5" at 0V when tray ends retreating?
NO
Voltage of CN102"3" at 0V when tray closing ends?
YES
Voltage of IC401"51" at 0V when tray closing ends?
NO
Check the connection of CN102"3" and IC401"51".
YES
NO
YES
OPEN/CLOSE operation is OK.
Check the connection between CN102 and mechanical unit. Check the mechanical unit.
Replace IC401

4. Microcomputer Volume

Processing of Each Microcomputer

* IC714 System microcomputer (sub-microcomputer)
After powering on, this microcomputer is continuously activated to control keys and remote control signals.
According to key operations or remote control signals, it controls (turns on/off) the power for LSIs including IC401 (main microcomputer) and the audio/video output circuit.
It also controls the resetting of the main microcomputer, FL driver IC (IC831) for FL display, and various LED displays.

* IC401 Main microcomputer
This microcomputer controls a group of LSIs of servo and signal processing sections according to commands from the system microcomputer.
After receiving time information from the signal processing section, it transmits the information together with the status to the system microcomputer.
It controls the resetting of the LSIs of the servo and signal processing sections.
It has IC402 (16Mbit ROM) as an external ROM.

Normal Starting Conditions

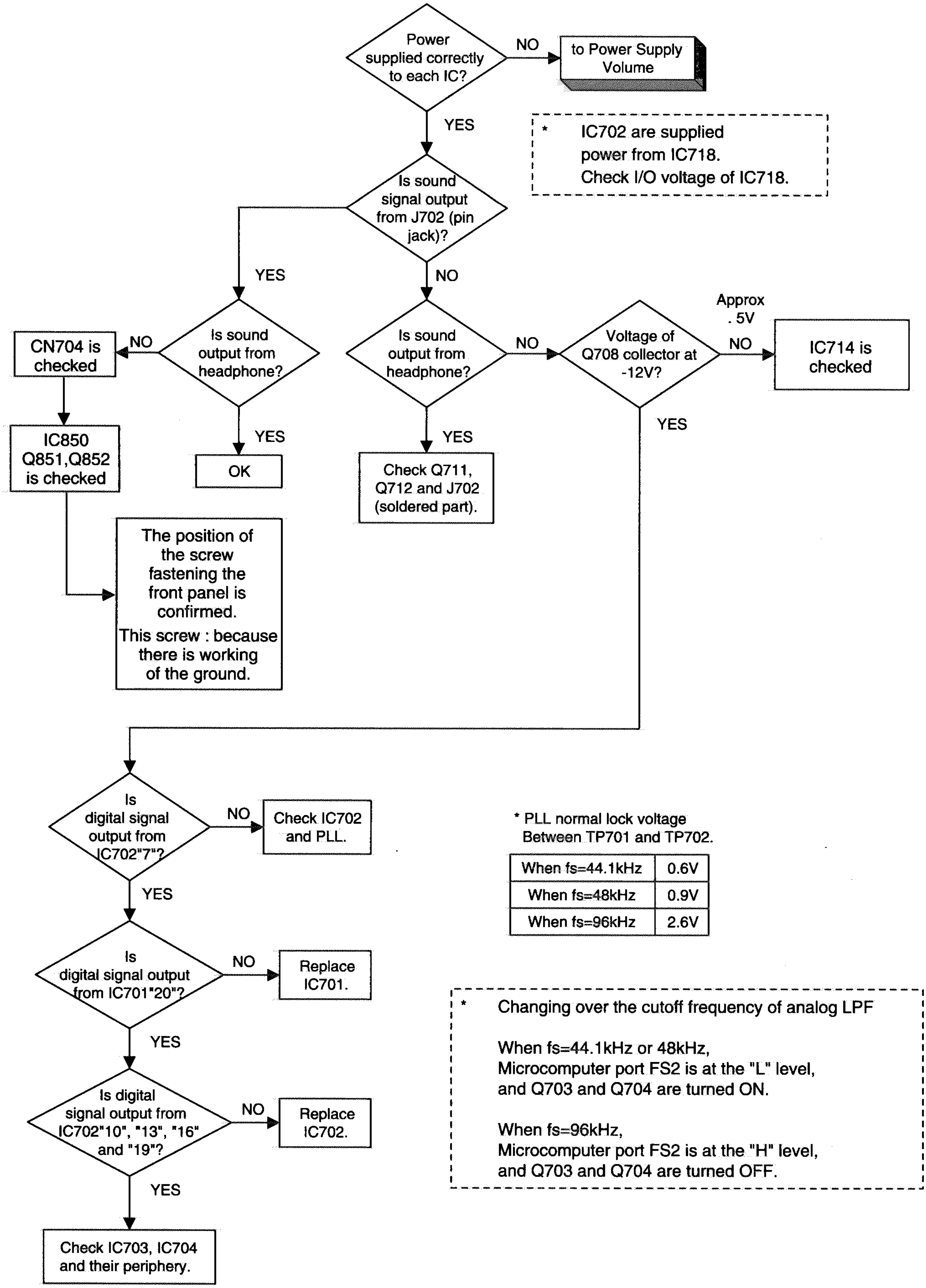
* IC714 System microcomputer
(1) +5V must be applied to "16" and "62".
(2) Oscillators of "13" and "15" must be oscillating correctly.
(3) Input to "12" (RESET) must be at +5V (reset cancel).

If above (1) to (3) are not satisfied when the P.STANDBY indicating lamp does not light at power-on, IC714 may be defective.

* IC401 Main microcomputer
(1) +5V must be applied to "17","22","34","54","66"
(2) Clock signal (13.5MHz) must be input to "23" from IC301 (ODC LSI).
(3) Input to "82" (RST) must be at +5V (reset cancel).
(4) Communication line with IC714 ("57","58,"67"~"69") and that with IC402 (external ROM) ("13"~"16","26"~"33","35"~"42","44","93"~"100") must work normally.

If above (1) to (3) are not satisfied when the P.STANDBY indicating lamp goes out but FL does not light when the POWER switch is turned on, IC401, IC714 or IC402 may be defective.

5. Audio Volume


Power supplied correctly to each IC?
NO
to Power Supply Volume
YES
Is sound signal output from J702 (pin jack)?
YES
NO
Is sound output from headphone?
NO
CN704 is checked
IC850 Q851,Q852 is checked
YES
OK
The position of the screw fastening the front panel is confirmed.
This screw : because there is working of the ground.
Is sound output from headphone?
NO
YES
Check Q711, Q712 and J702 (soldered part).
Voltage of Q708 collector at -12V?
Approx . 5V
NO
IC714 is checked
YES
Is digital signal output from IC702"7"?
NO
Check IC702 and PLL.
YES
Is digital signal output from IC701"20"?
NO
Replace IC701.
YES
Is digital signal output from IC702"10", "13", "16" and "19"?
NO
Replace IC702.
YES
Check IC703, IC704 and their periphery.

* IC702 are supplied power from IC718. Check I/O voltage of IC718.

* PLL normal lock voltage Between TP701 and TP702.

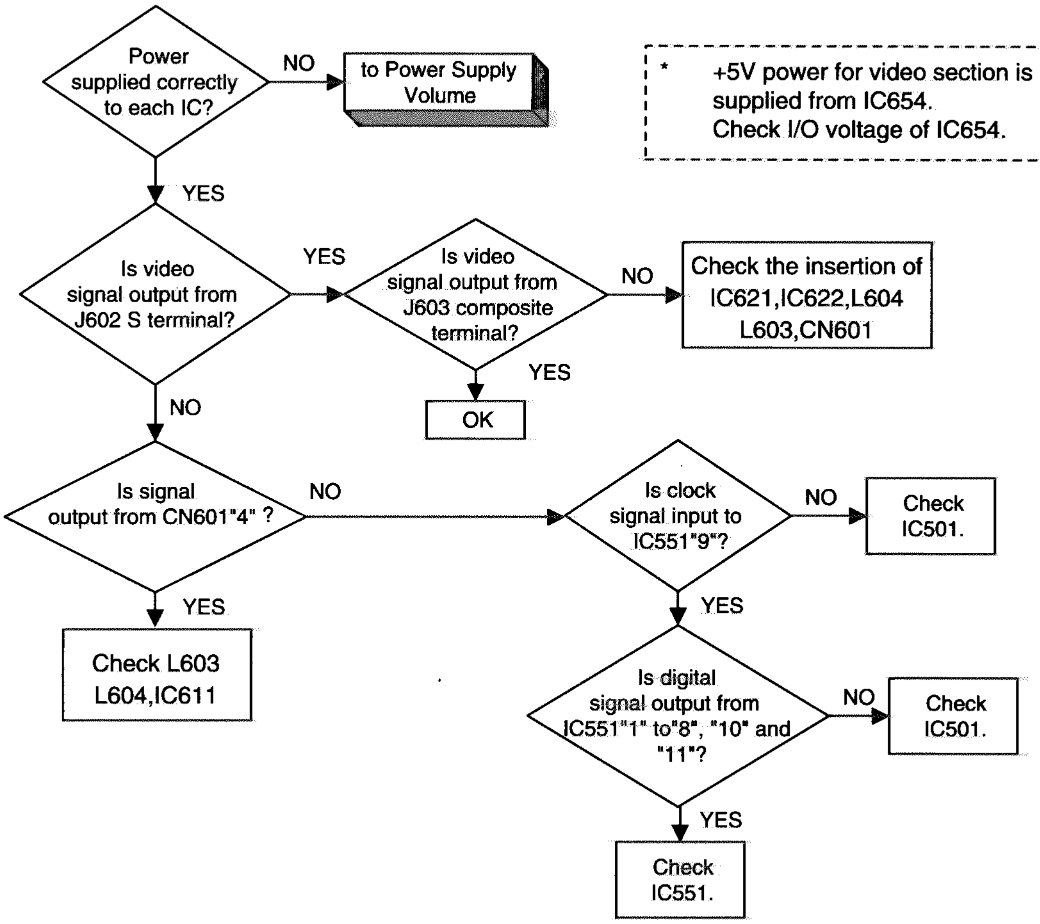
When fs=44.1kHz	0.6V
When fs=48kHz	0.9V
When fs=96kHz	2.6V

* Changing over the cutoff frequency of analog LPF

When fs=44.1kHz or 48kHz, Microcomputer port FS2 is at the "L" level, and Q703 and Q704 are turned ON.

When fs=96kHz, Microcomputer port FS2 is at the "H" level, and Q703 and Q704 are turned OFF.

6. Video Volume


Power supplied correctly to each IC?
NO
to Power Supply Volume
YES
Is video signal output from J602 S terminal?
YES
Is video signal output from J603 composite terminal?
NO
Check the insertion of IC621,IC622,L604 L603,CN601
YES
OK
NO
Is signal output from CN601"4" ?
NO
Is clock signal input to IC551"9"?
NO
Check IC501.
YES
Check L603 L604,IC611
YES
Is digital signal output from IC551"1" to"8", "10" and "11"?
NO
Check IC501.
YES
Check IC551.

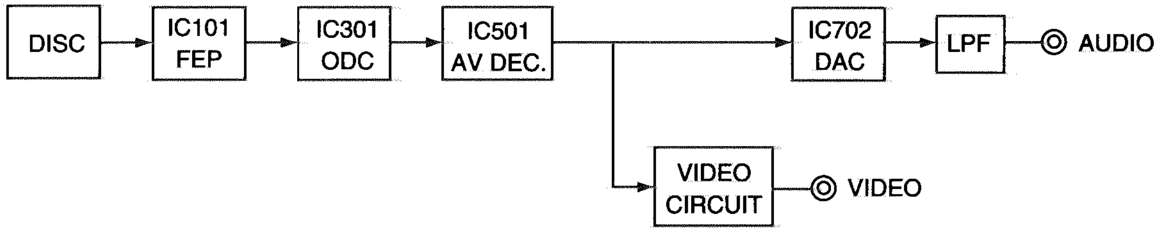
* +5V power for video section is supplied from IC654.
Check I/O voltage of IC654.

* Service tips

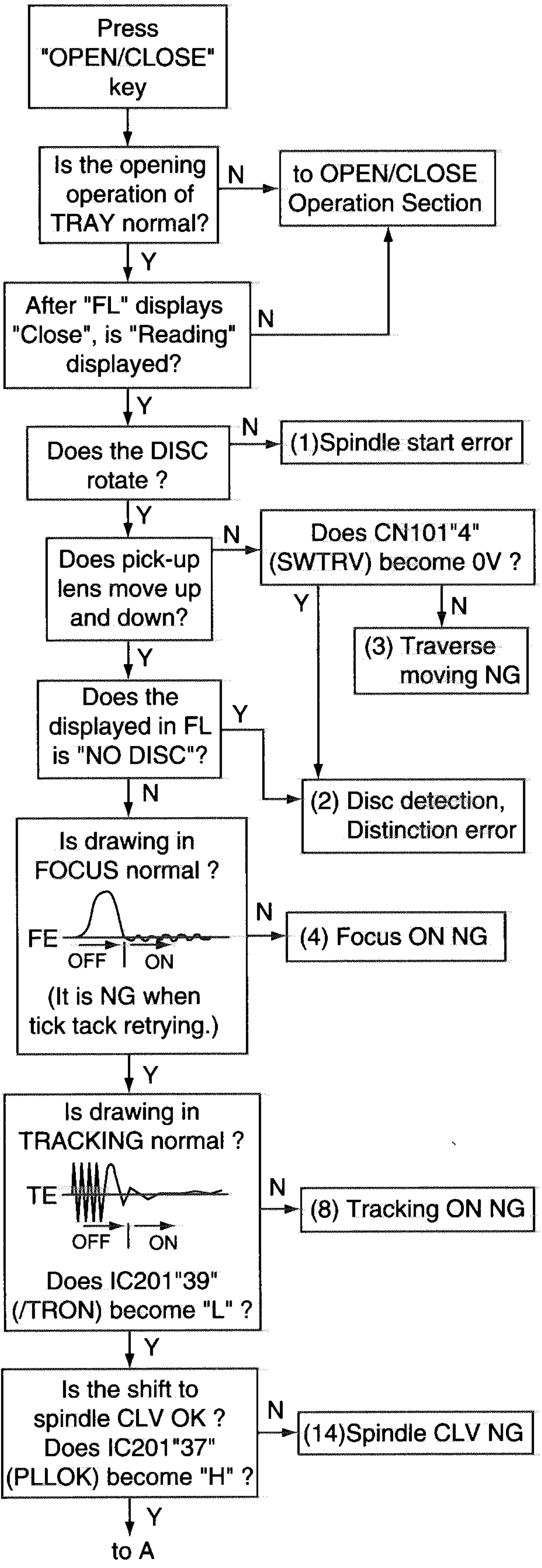
(1) The disc playback screen is in the normal condition but graphics in the "ON SCREEN" mode are abnormal => Replace IC553.

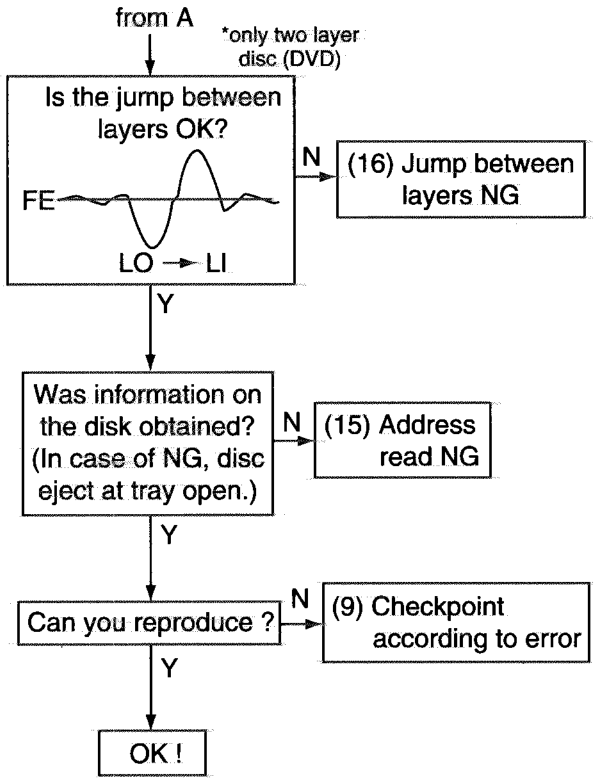
(2) Only 1/4 compressed playback screen of DVD or video-CD is abnormal => Replace IC552.

Signal flow of DISC media


DISC
IC101 FEP
IC301 ODC
IC501 AV DEC.
IC702 DAC
LPF
AUDIO
VIDEO CIRCUIT
VIDEO

7.Servo volume


Press "OPEN/CLOSE" key
Is the opening operation of TRAY normal?
N
to OPEN/CLOSE Operation Section
Y
After "FL" displays "Close", is "Reading" displayed?
N
Y
Does the DISC rotate ?
N
(1)Spindle start error
Y
Does pick-up lens move up and down?
N
Does CN101"4" (SWTRV) become 0V ?
Y
N
(3) Traverse moving NG
Y
Does the displayed in FL is "NO DISC"?
Y
(2) Disc detection, Distinction error
N
Is drawing in FOCUS normal ?
FE
OFF
ON
(It is NG when tick tack retrying.)
N
(4) Focus ON NG
Y
Is drawing in TRACKING normal ?
TE
OFF
ON
Does IC201"39" (/TRON) become "L" ?
N
(8) Tracking ON NG
Y
Is the shift to spindle CLV OK ? Does IC201"37" (PLLOK) become "H" ?
N
(14)Spindle CLV NG
Y
to A


from A
*only two layer disc (DVD)
Is the jump between layers OK?
FE
LO → LI
N
(16) Jump between layers NG
Y
Was information on the disk obtained? (In case of NG, disc eject at tray open.)
N
(15) Address read NG
Y
Can you reproduce ?
N
(9) Checkpoint according to error
Y
OK !

Check points for each error

(1) Spindle start error

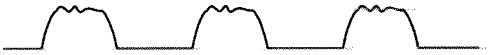
*Defective spindle motor
Are there 11ohms resistance between each pin of CN101 "33~35"?
(The power supply is turned off and measured.)

*Hall element: Is sine wave output between CN101 "25" and "27", between "28" and "29", and between "30" and "31" during rotation?

In either case, replace the mechanical unit.

*Defective spindle driver (IC251)
Is a driving wave output from CN101 "33~35" ?

During rotation



Is IC251 "1" at "H" level (START)?
Servo IC --- Is control signal sent to the motor driver ?

IC201 "95" : Duty is 50% during stop, but varies during rotation (greatly varies at start).
--- If not sent, pattern or servo IC (IC201) is defective.

R259 : approx 2.5V during stop, but varies during rotation (greatly varies at start).
--- of not sent, pattern or servo IC (IC201) is defective.

Is FG input to servo IC ?
Observe FG wave from IC201 "89". --- If not output, pattern, IC251 or IC201 is defective.

(2) Disc Detection, Distinction error (no disc, no REFNV)

- Laser is defective.
- Front End Processor is defective (IC101).
- APC circuit is defective. --- Q101, R103, R104.
- Pattern is defective. --- Lines for CN101 "15" and "17".
  Lines for between IC201 "12" and IC101 "2"(LDONA),
  between IC201 "13" and IC101 "1" (LDONB).
- Servo IC is defective (IC201).
- Is signal sent to IC201(servo)"71" AS2 ?
- IC101 --- For signal from IC101 to IC301, is signal output from IC101 "88" (RFAS1) and IC101 "71" REENV ?

(3) Traverse movement NG

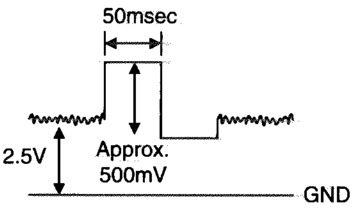
* For automatic adjustment, traverse movement occurs only when the position is changed to retry judging the disc type after the 1st judgment resulted in an error. Therefore, traverse movement rarely occurs because, in most cases, disc judgment at the current position (1st time judgment) is executed successfully. (Of course, NG rarely occurs in this step.)

Note: 1st time judgment of disc type resulted in NG. --- The re-judgment of disc type may not be successful. Therefore, after removing the cause of traverse movement, re-execute automatic adjustment and confirm that no problem exists.

* Check point

a) During stop
Whether 50% duty pulse is output to R273
Whether between R274 and C271 is at approx. 2.5VDC
Offset voltage between CN101 "34" and "35" (scores mV if exists)

b) When tray is opened or closed
Check by oscilloscope whether a rectangular wave signal is output from CN101 "34" or "35".



If checking a) or b) resulted in NG, IC201 maybe defective.

(4) Focus ON NG

* Is FE output ? --- Pattern, IC101
* Is FCDRV signal sent ? (R286) --- Pattern, IC301
* Is driving voltage sent ?
CN101 "20", "21" --- If NG, pattern, driver, mechanical unit (with the power turned off, measure the resistance between CN101 "20" and "21").
* Does CN101 "7"(SRF1) become "H" and is the focus drawing in done?
--- Mechanical unit (laser power too low), IC101(defective gain)
--- Moreover, It is thought that abnormality is found in the disk.
* Mechanical unit is defective.

(5) Tracking ON NG

* When the tracking loop cannot be drawn in, IC201 "39" (/TRON) does not become "L".
* Mechanical unit is defective.
Because the undermentioned adjustment value is abnormal, it is not possible to draw in normally.
* Periphery of driver (IC271)
Constant or IC it self is defective.
(When passing without becoming abnormal while adjusting the following.)
* Servo IC (IC201)
When improperly adjusted due to defective IC.

[Focus position rough adjustment]
[Phase difference cancellation rough adjustment]
[Tracking balance adjustment]

(6) Spindle CLV NG

* When the spindle cannot be shifted to CLV Servo, does not become "H" between IC301 "69" and IC201"37".
* IC201 Is signal output from CN103 "1" (RFOP)?
* IC201 Is signal output from CN103 "11" (DSLIP)?
* IC201 Is signal output from CN103 "6" to "9" (binary-coded clock and data)?
* IC201 Is "39" (/TRON) at "L" level ?
* IC301 "74" to "76" --- Is signal output to IC201 "24", "25", "28" (In case of only CD).
(Serial communication of rotation information)
* Spindle motor driver is defective.
Even when one of the three phases is defective, item (1) may be passed.
--- Check the second item in (1) above.
* C260 to C263 Defective soldering
If noise eliminating capacitors are not properly soldered, noise may ride on the waveform.
* Besides, the undermentioned cause is thought though specific of the cause is difficult because various factors are thought.
Mechanism is defective.(jitter)
IC101, IC201.

(7) Address read NG

* Besides, the undermentioned cause is thought though specific of the cause is difficult because various factors are thought.
Mechanism is defective. (jitter)
IC201, IC301, IC401.
The disc is dirty or the wound has adhered.

(8) Between layers jump NG (double-layer disc only)

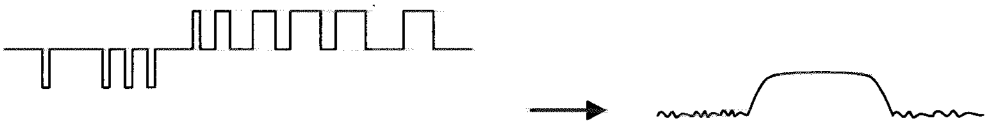
* When the focus flight is generated when jumps between layers.
Because all adjustments for L1 layer must be successful, this error may rarely be due to a circuit defect.
* Crosstalk might occur from tracking to focus system. (See (11)) --- Replace the mechanical unit.
* Driver surroundings.
* Defect of constant and IC.
* For double-layer discs, after checking CLV on layer L1, jumps to layer L0 after mode changes to FG. Then tracking is turned off, and adjustments are executed from the focus position coarse adjustment in order.
* When the jump between layers is done on the single-layer disk, the disk distinction error is thought.
--- The laser power is low (RF level is confirmed by CN102 "1" (RFOP)).
--- AS1, AS2, REFNV Is the signal sent to between IC101 and IC201 ?

(9) Neither picture nor sound is output

* Cannot search

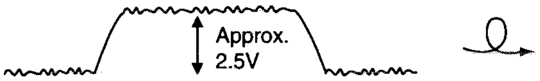
a) Can the feed system be driven?

Check the waveform of TRSDRV signal (R273). --- Waveform between R274 and C271.



Search results in a change of duty
(three values with 2.5V at the center)
(The figure is exaggerated.)

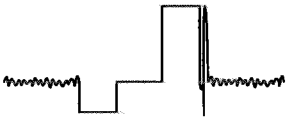
Check the waveform of CN101 "1" and "2". --- After the driver (IC271)



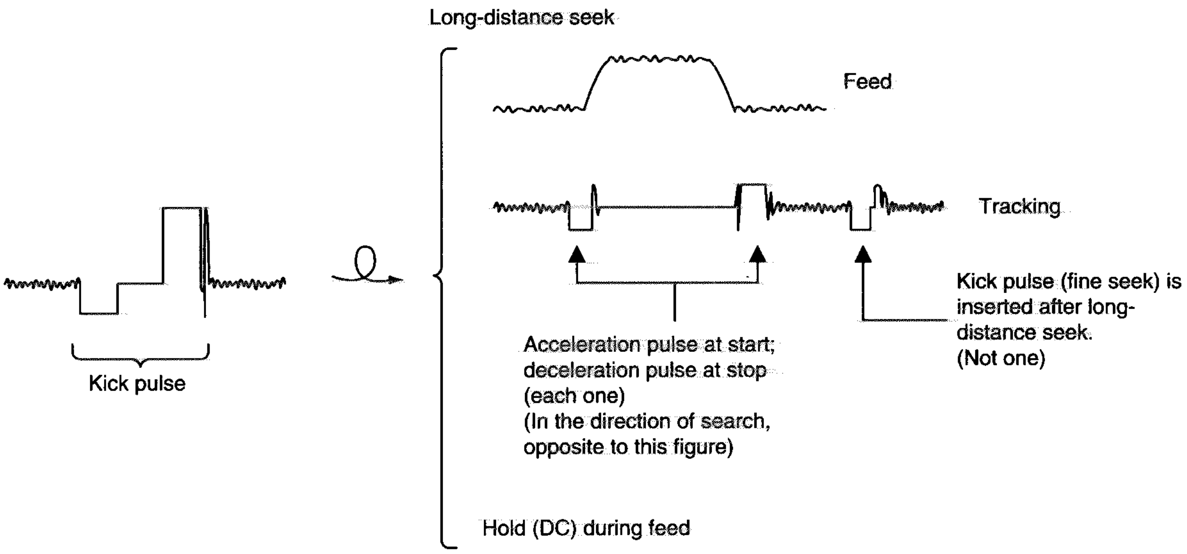
For short-distance search, the waveform becomes roundish, not trapezoidal, and voltage is low.

b) Is kick available?

Check the TRDRV signal waveform from R289.



Check the waveform of CN101 "22" and "23" --- After the driver (IC271)
Although differs in amplitude and DC offset, the waveform is similar to that of R289

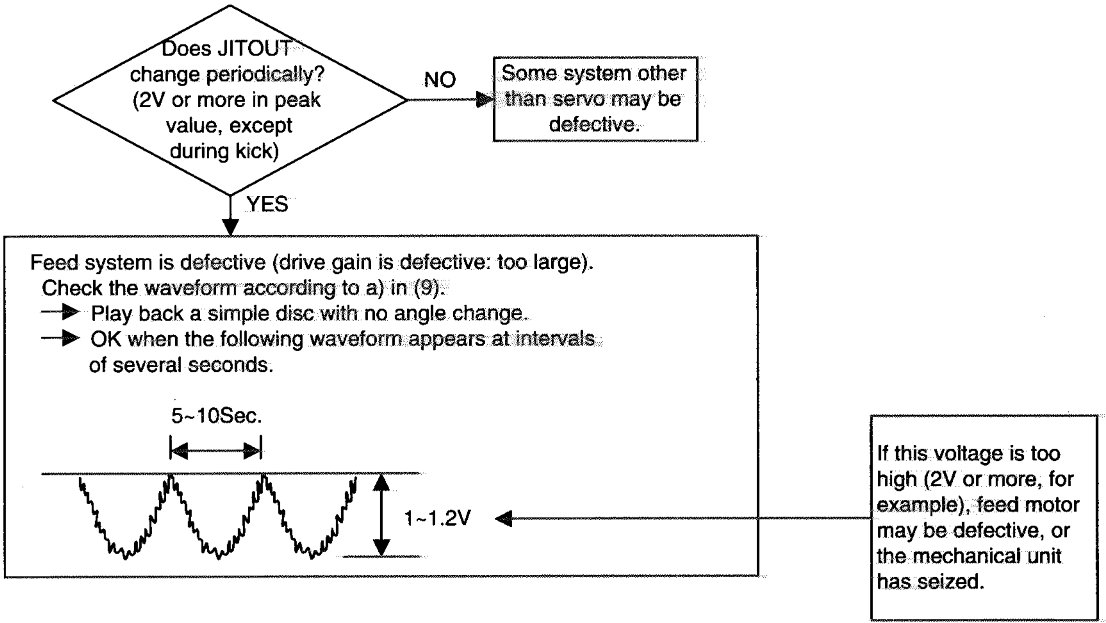


Acceleration pulse at start; deceleration pulse at stop (each one)
(In the direction of search, opposite to this figure)

Kick pulse (fine seek) is inserted after long-distance seek.
(Not one)

Hold (DC) during feed

(10) Picture is distorted or abnormal sound occurs at intervals of several seconds.



Does JITOUT change periodically? (2V or more in peak value, except during kick)

NO → Some system other than servo may be defective.

YES ↓

Feed system is defective (drive gain is defective: too large).
Check the waveform according to a) in (9).
→ Play back a simple disc with no angle change.
→ OK when the following waveform appears at intervals of several seconds.

If this voltage is too high (2V or more, for example), feed motor may be defective, or the mechanical unit has seized.

(11) Others (unusual events experienced to date)

* Problem occurs with double-layer discs although no problem occurs with single-layer DVD.
(Error occurs, or search becomes unstable and takes longer.)
Crosstalk might occur from tracking to focus system.
--- When FE was observed during search (skip, etc.), it was found that a wave resembling TE with an amplitude of 200mVp-p was riding on FE.
--- Mechanical unit was replaced.

* Error frequently occurred in the outer part of discs although no error occurred in the inner part.
--- Mechanical unit was replaced because tilt seemed to be defective.

(12) CD During normal playback operation

a) Is TOC reading normal? —NO→ Please refer to "Servo Volume" flow.
Displays total time
for CD-DA.
Shifts to double-speed
mode for V-CD.

↓ YES

b)Playback possible? —NO→ *--:-- is displayed during FL serch.
According to [*Cannot serch] for DVD(9), check the feed and tracking systems.
*No sound is output although the time is displayed.(CA-DA)
*DAC, etc, other than servo.
*The passage of time is not stable, or picture is abnormal.(V-CD)
*The wound of the disc and dirt are confirmed.

(13) Others

V-CD : Frequent occurrence of error in inside and outer.
(Even the disk without the wound : when generated.)

Waveform observation
--- Is the oscillation frequency of about 700~900Hz output?
(Borrow a pertinent disk for the complaint for the combination with the disk.)
--- Exchanges mechanism for the mechanism resonance.

Adjustment method

Adjustment and confirmation matter

(1) Auto adjustment method

If microprocessor (IC401, IC402, IC714, IC716) or servo board (LEA20001) is replaced, initialize the DVD player in the following manner:

1. Initialize the DVD player in the following manner:

    1) Make sure that no disc is on the tray.
    2) While pressing the "ON SCREEN" and "TITLE" keys simultaneously on the DVD player, connect to the outlet.
    3) Press the "POWER" key, then "TEST 2U3" is displayed on the FL.
    4) Press the "ENTER" key to start initialization of EEPROM (takes approx. 3seconds). When indicator of "RESUME" lights, completes initialization.
    5) Press the "OPEN/CLOSE" key, and the tray comes out. This key is disabled during the initialization of EEPROM. When this key command is accepted to open the tray, the initialization of EEPROM has already ended.

2. With the test disc supplied from JVC (DEMO1004 or VT-501) on the tray, press the "OPEN/CLOSE" key to let the tray retreat. (Do not push the tray in.)

3. Press the "ON SCREEN" key. The disc rotates for a while and then stops.

4. The disc is taken out of the tray, and the power supply is turned off.

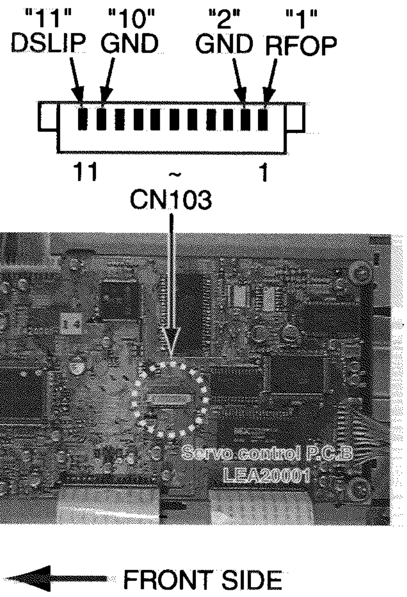
(2) Confirmation of DVD RF level

1.The oscilloscope is connected between "1"(RFOP) of CN103 and "2"(GND).

2.Reproduction of the test disc (DEMO1004 or VT-501) made by JVC.

3.It is confirmed that RF LEVEL is 300mVp-p~600mVp-p.

4.When there is disorder in the waveform road cuts etc, test disk is exchanged and measured.



(3) Confirmation of CD jitter level and RF level

1. The CD jitter meter is connected between "10"(GND) of CN103 and "11"(DSLIP). The RF level is observed at the same time. (The monitor output terminal of CD jitter meter is connected with the oscilloscope.)

2. The first test disk(CTS-1000) made of JVC is reproduced.

3. It is confirmed that jitter value is below 26nsec with there not a road cutting in the waveform.

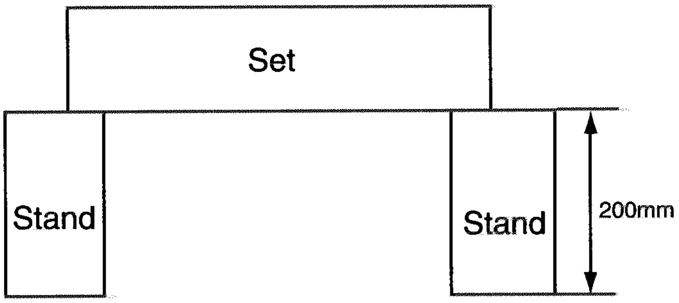
4. It is confirmed that RF LEVEL is 350~550mVp-p.

5. When there is disorder in the waveform road cuts etc, test disk is exchanged and measured.

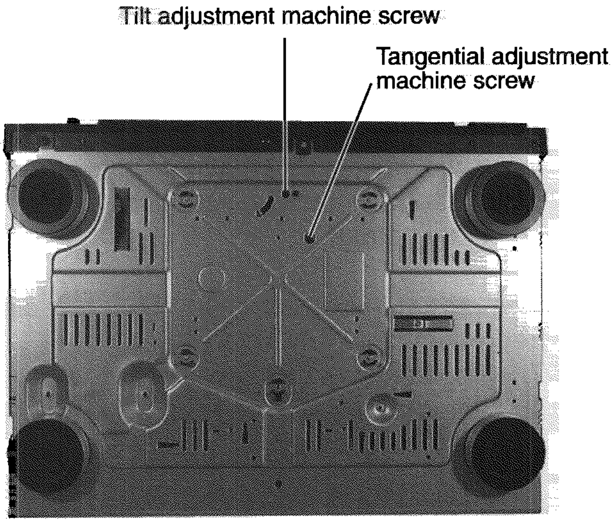
(4) Flap adjustment of disc motor

Equipment necessary for adjustment

1.Measurement machine
  Oscilloscope
2.DVD test disc
  VT-501
3.Video CD/CD-DA disc
4.Others
  General tool,Hex-head wrench(2mm)



Position of flap adjustment machine screw


Tilt adjustment machine screw
Tangential adjustment machine screw

Point of adjustment

* Please execute the static electricity protection measures before starting the adjustment.

* When the following parts are exchanged,optical adjustment "Adjust the flap of the disc motor" is necessary.

1.The disc motor was exchanged.
2.The laser pick up was exchanged.
3.The traverse motor unit was exchanged.

Note

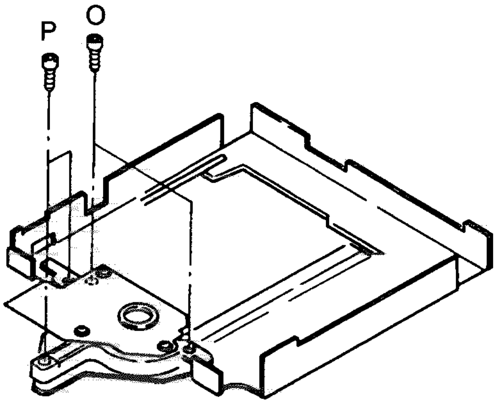
Additionally, please adjust the flap of the disc motor when the picture quality deterioration is seen .The basic adjustment though, is unnecessary for part exchange in the traverse.
An optical adjustment in the laser pick up cannot be done.
Please adjust the flap of the disc motor after exchanging the laser pick up.

* When the traverse unit is exchanged, the adjustment is basically unnecessary.

Measurement	Adjustment part	Mode	Disc
CN103 pin"1" GND:Chassis	Flap adjustment screw	Reproduction part	VT-501
Measurement machine			
Oscilloscope			

"Flap adjustment" of the disc motor adjusts "Tangential adjustment machine screw" and "Tilt adjustment machine screw" from the main body bottom.

1. The part at the center on the DVD test disc is reproduced.
2. The flap adjustment screws is turned alternately and adjusted like clearly seeing the waveform of CN103"1" to the way.



Note
1. The tangential adjustment is done finish and, then, tilt is adjusted.
2. The repeat the adjustment 2-3 times,for best result.
3. The final adjustment should be tilt adjustment.

Confirmation after adjustment.

Confirm to reproduce video CD and CD-DA after the DVD test disc is adjusted and to find abnormality.

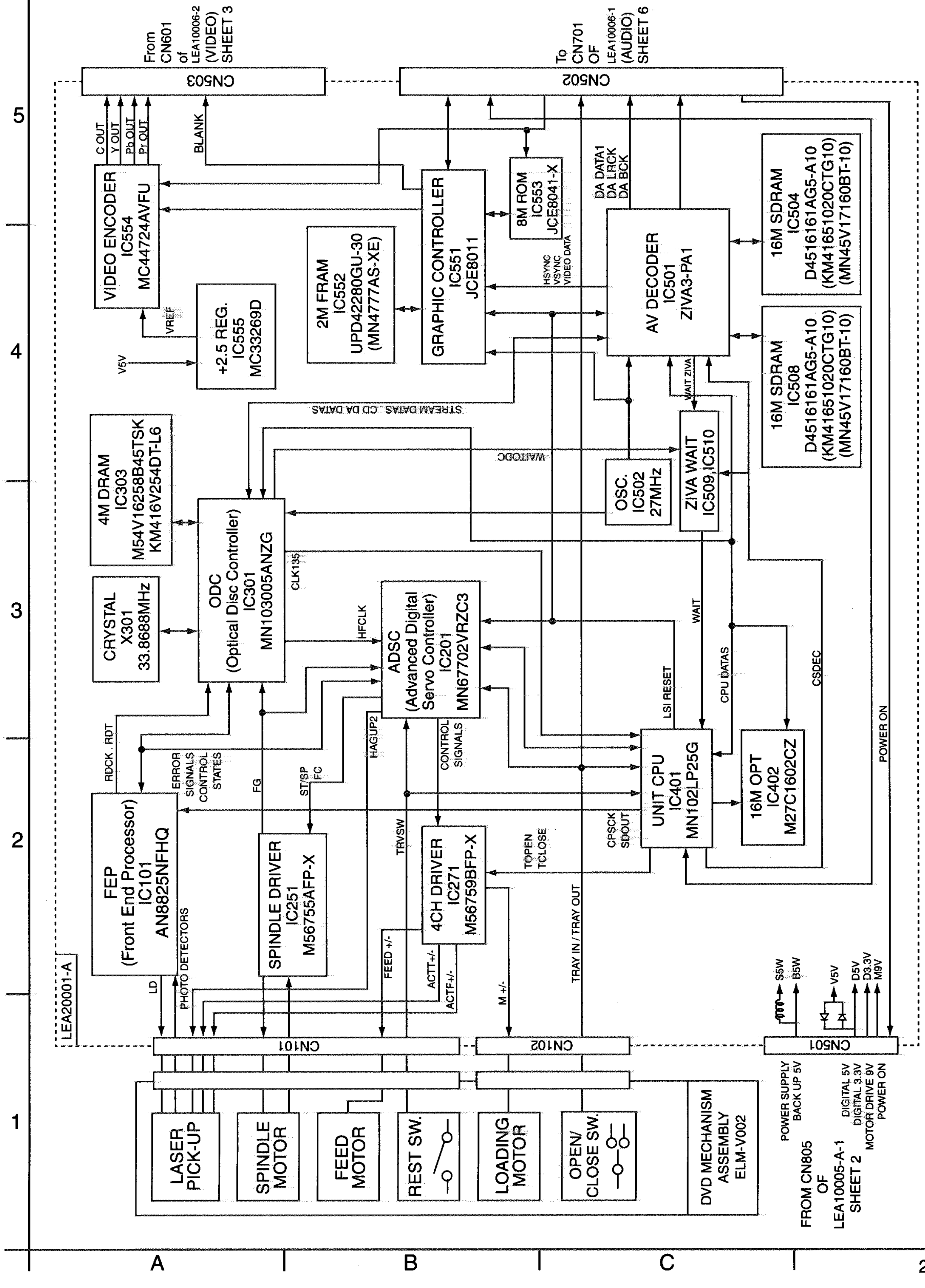
(5) About keeping the disc

As for the DVD test disc, plane accuracy is demanded.Please note the keeping place on the disc.

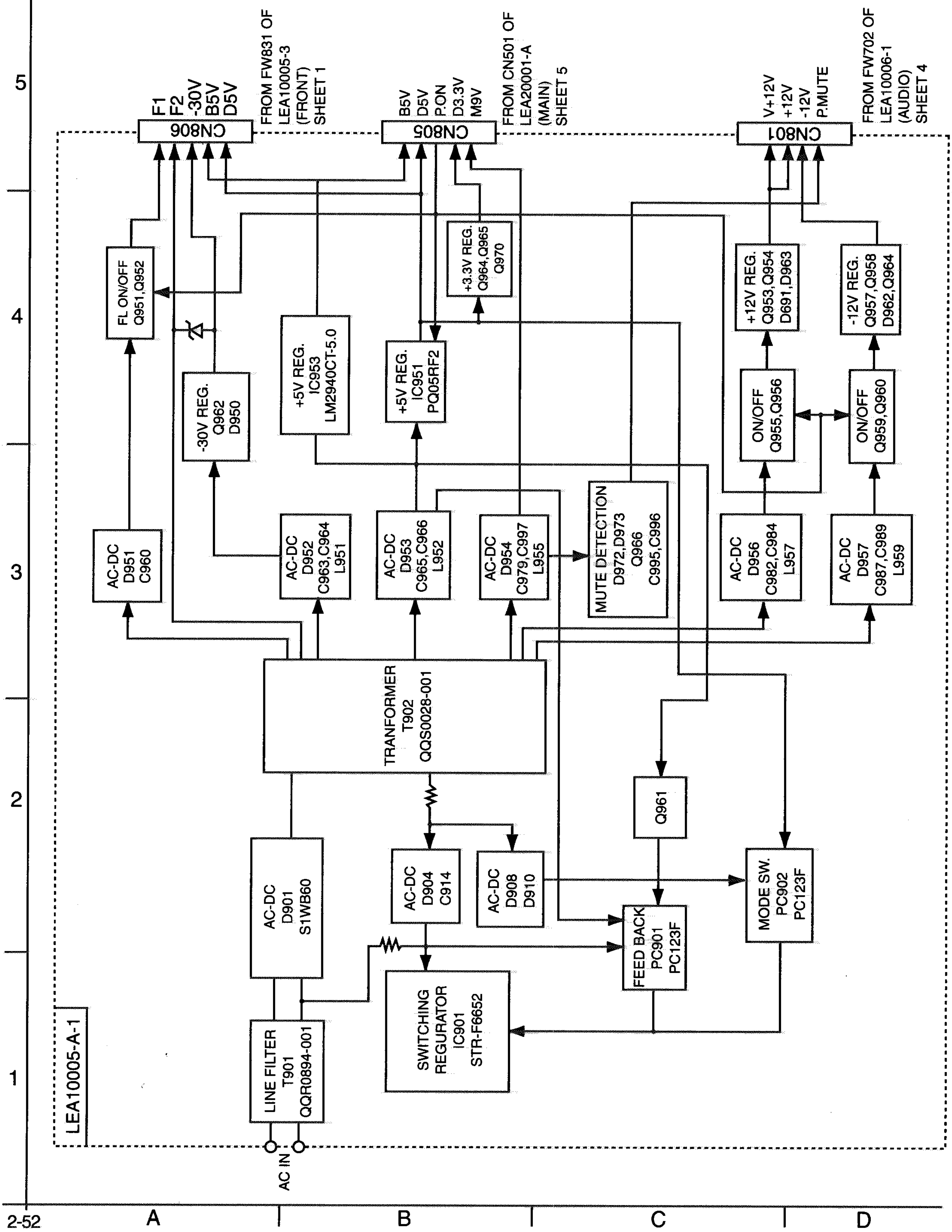
1. Please do not put the disc directly on the work desk etc. after uses .
2. To keep the planarity of the disc, politely handle ,and please put in a special case and keep the disc vertically after uses .
   Please keep keeping the disc in a cool place where direct sunshine and the air-conditioning wind do not drive.
3. When the disc curves,an accurate adjustment cannot be done.
   Please exchange for a new test disc and adjust optics.
4. Other discs might not be able to be reproduced when adjusting on a curved disc.

Block diagrams

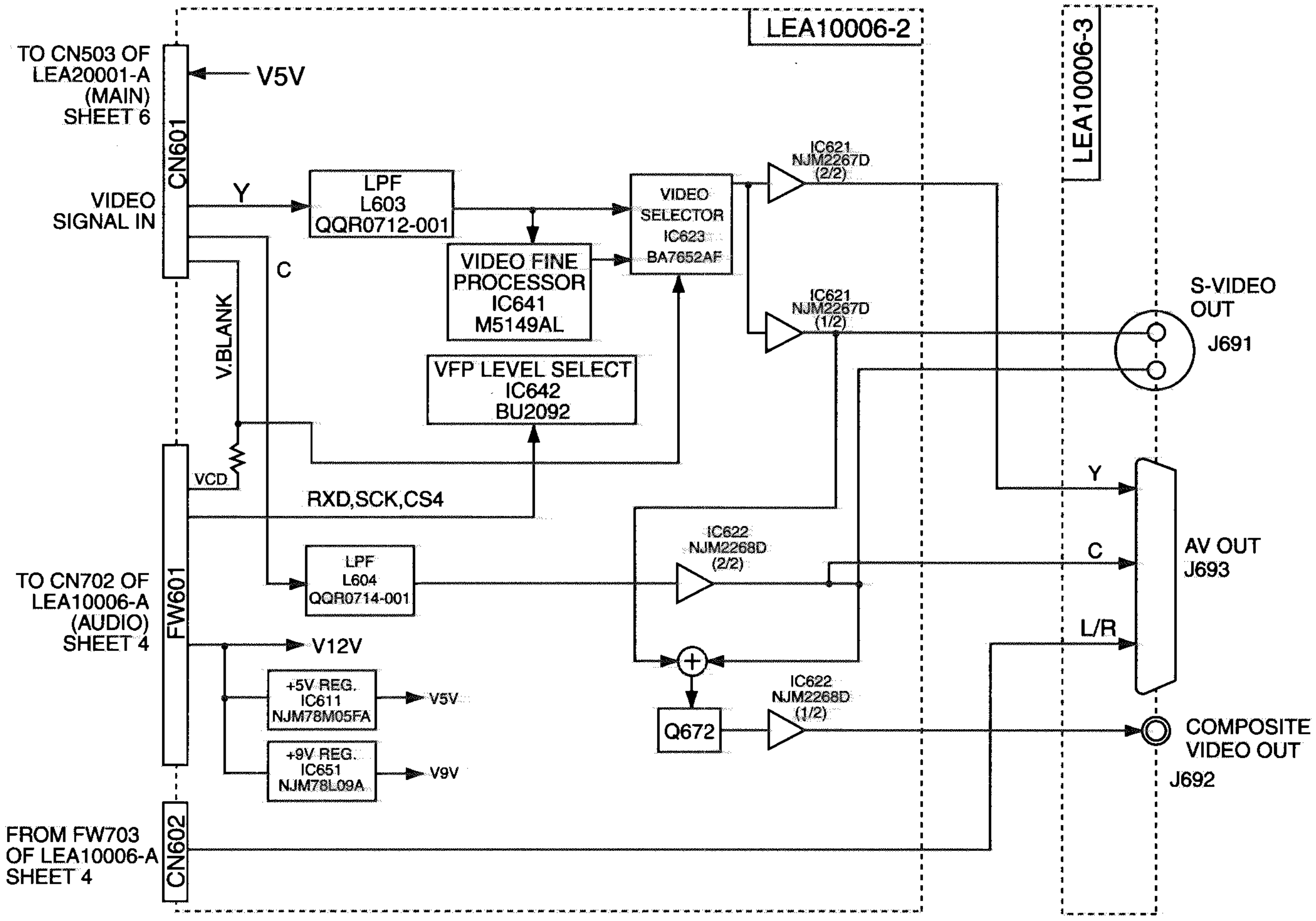
■DVD SERVO CONTROL Section

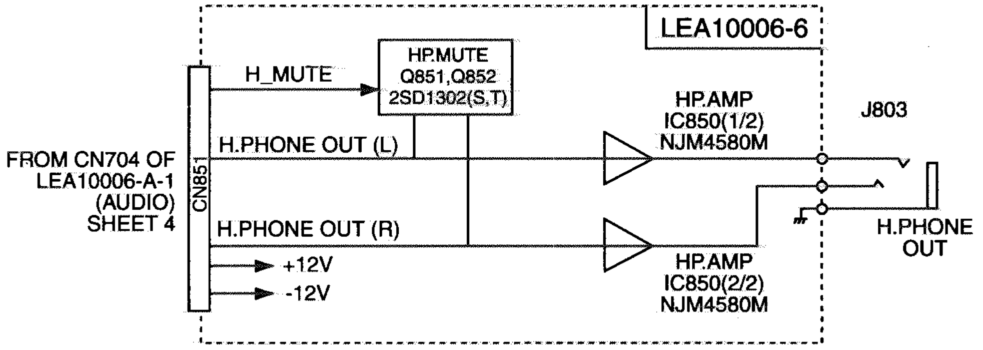

From CN601 of LEA10006-2 (VIDEO) SHEET 3
To CN701 OF LEA10006-1 (AUDIO) SHEET 6
CN503
CN502
C OUT
Y OUT
Pb OUT
Pr OUT
BLANK
VIDEO ENCODER IC554 MC44724AVFU
GRAPHIC CONTROLLER IC551 JCE8011
8M ROM IC553 JCE8041-X
DA DATA1
DA LRCK
DA BCK
HSYNC
VSYNC
VIDEO DATA
AV DECODER IC501 ZIVA3-PA1
16M SDRAM IC504 D4516161AG5-A10 (KM41651020CTG10) (MN45V17160BT-10)
2M FRAM IC552 UPD42280GU-30 (MN4777AS-XE)
+2.5 REG. IC555 MC33269D
VREF
V5V
16M SDRAM IC508 D4516161AG5-A10 (KM41651020CTG10) (MN45V17160BT-10)
STREAM DATAS . CD DA DATAS
WAITODC
WAIT ZIVA
4M DRAM IC303 M54V16258B45TSK KM416V254DT-L6
OSC. IC502 27MHz
ZIVA WAIT IC509,IC510
ODC (Optical Disc Controller) IC301 MN103005ANZG
CLK135
CRYSTAL X301 33.8688MHz
HFCLK
ADSC (Advanced Digital Servo Controller) IC201 MN67702VRZC3
WAIT
LSI RESET
CPU DATAS
CSDEC
POWER ON
RDCK . RDT
ERROR SIGNALS CONTROL STATES
FG
ST/SP
FC
HAGUP2
CONTROL SIGNALS
UNIT CPU IC401 MN102LP25G
16M OPT IC402 M27C1602CZ
FEP (Front End Processor) IC101 AN8825NFHQ
SPINDLE DRIVER IC251 M56755AFP-X
TRVSW
4CH DRIVER IC271 M56759BFP-X
TOPEN
TCLOSE
CPSCK
SDOUT
TRAY IN / TRAY OUT
LEA20001-A
LD
PHOTO DETECTORS
FEED +/-
ACTT+/-
ACTF+/-
M +/-
S5W
B5W
V5V
D5V
D3.3V
M9V
CN101
CN102
CN501
LASER PICK-UP
SPINDLE MOTOR
FEED MOTOR
REST SW.
LOADING MOTOR
OPEN/ CLOSE SW.
DVD MECHANISM ASSEMBLY ELM-V002
POWER SUPPLY
BACK UP 5V
DIGITAL 5V
DIGITAL 3.3V
MOTOR DRIVE 9V
POWER ON
FROM CN805 OF LEA10005-A-1 SHEET 2
5
4
3
2
1
A
B
C

■DC REGURATOR Section

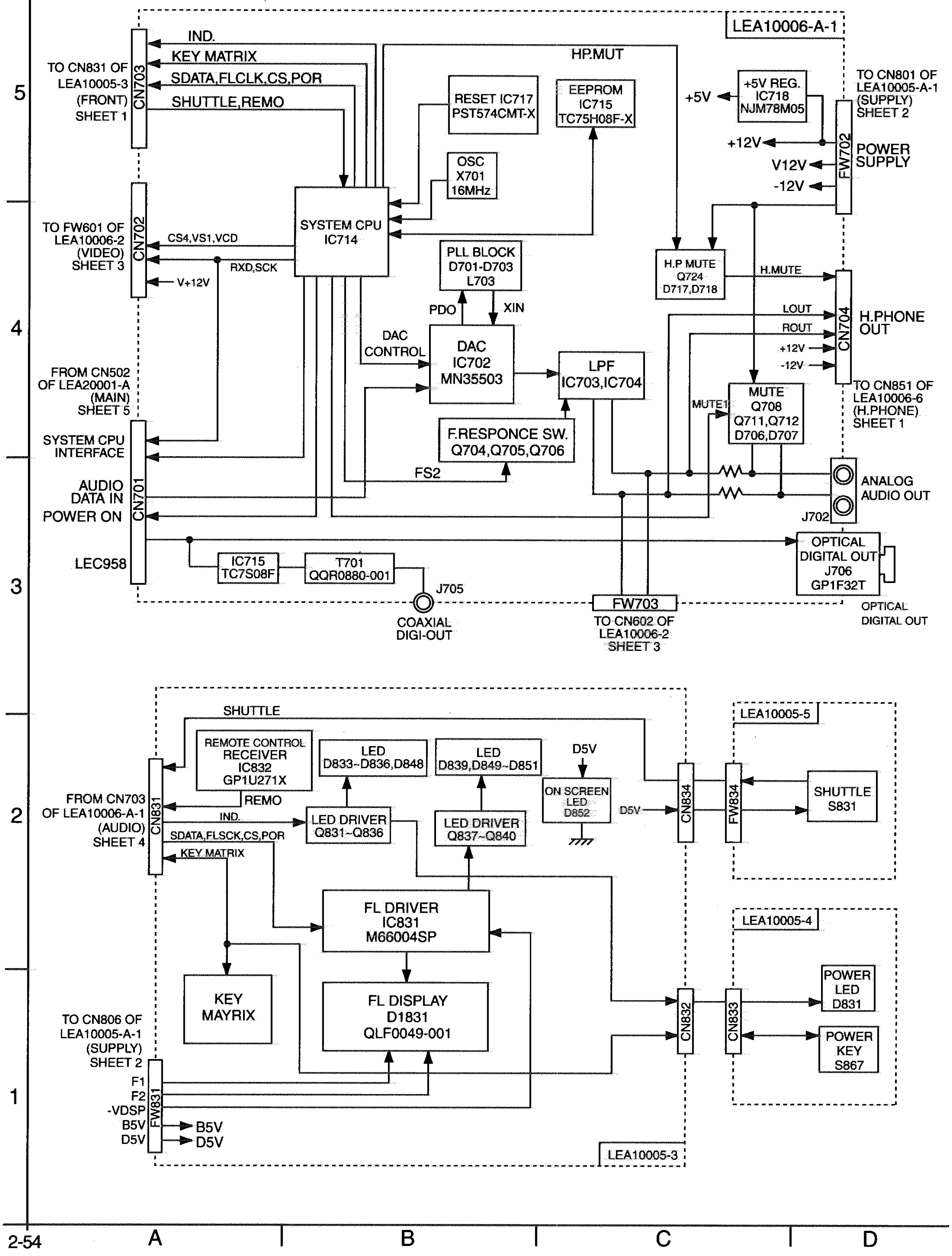

F1
F2
-30V
B5V
D5V
CN806
FROM FW831 OF
LEA10005-3
(FRONT)
SHEET 1
B5V
D5V
P.ON
D3.3V
M9V
CN805
FROM CN501 OF
LEA20001-A
(MAIN)
SHEET 5
V+12V
+12V
-12V
P.MUTE
CN801
FROM FW702 OF
LEA10006-1
(AUDIO)
SHEET 4
FL ON/OFF
Q951,Q952
-30V REG.
Q962
D950
+5V REG.
IC953
LM2940CT-5.0
+5V REG.
IC951
PQ05RF2
+3.3V REG.
Q964,Q965
Q970
+12V REG.
Q953,Q954
D691,D963
-12V REG.
Q957,Q958
D962,Q964
ON/OFF
Q955,Q956
ON/OFF
Q959,Q960
AC-DC
D951
C960
AC-DC
D952
C963,C964
L951
AC-DC
D953
C965,C966
L952
AC-DC
D954
C979,C997
L955
MUTE DETECTION
D972,D973
Q966
C995,C996
AC-DC
D956
C982,C984
L957
AC-DC
D957
C987,C989
L959
TRANFORMER
T902
QQS0028-001
Q961
AC-DC
D901
S1WB60
AC-DC
D904
C914
AC-DC
D908
D910
FEED BACK
PC901
PC123F
MODE SW.
PC902
PC123F
SWITCHING
REGURATOR
IC901
STR-F6652
LINE FILTER
T901
QQR0894-001
LEA10005-A-1
AC IN
1
2
3
4
5
A
B
C
D

■VIDEO OUT & HEADPHONE Section


LEA10006-2
LEA10006-3
TO CN503 OF LEA20001-A (MAIN) SHEET 6
CN601
V5V
VIDEO SIGNAL IN
Y
C
V.BLANK
LPF L603 QQR0712-001
VIDEO FINE PROCESSOR IC641 M5149AL
VFP LEVEL SELECT IC642 BU2092
VIDEO SELECTOR IC623 BA7652AF
IC621 NJM2267D (2/2)
IC621 NJM2267D (1/2)
S-VIDEO OUT
J691
VCD
RXD,SCK,CS4
TO CN702 OF LEA10006-A (AUDIO) SHEET 4
FW601
LPF L604 QQR0714-001
IC622 NJM2268D (2/2)
Y
C
L/R
AV OUT
J693
V12V
+5V REG. IC611 NJM78M05FA
V5V
+9V REG. IC651 NJM78L09A
V9V
Q672
IC622 NJM2268D (1/2)
COMPOSITE VIDEO OUT
J692
FROM FW703 OF LEA10006-A SHEET 4
CN602

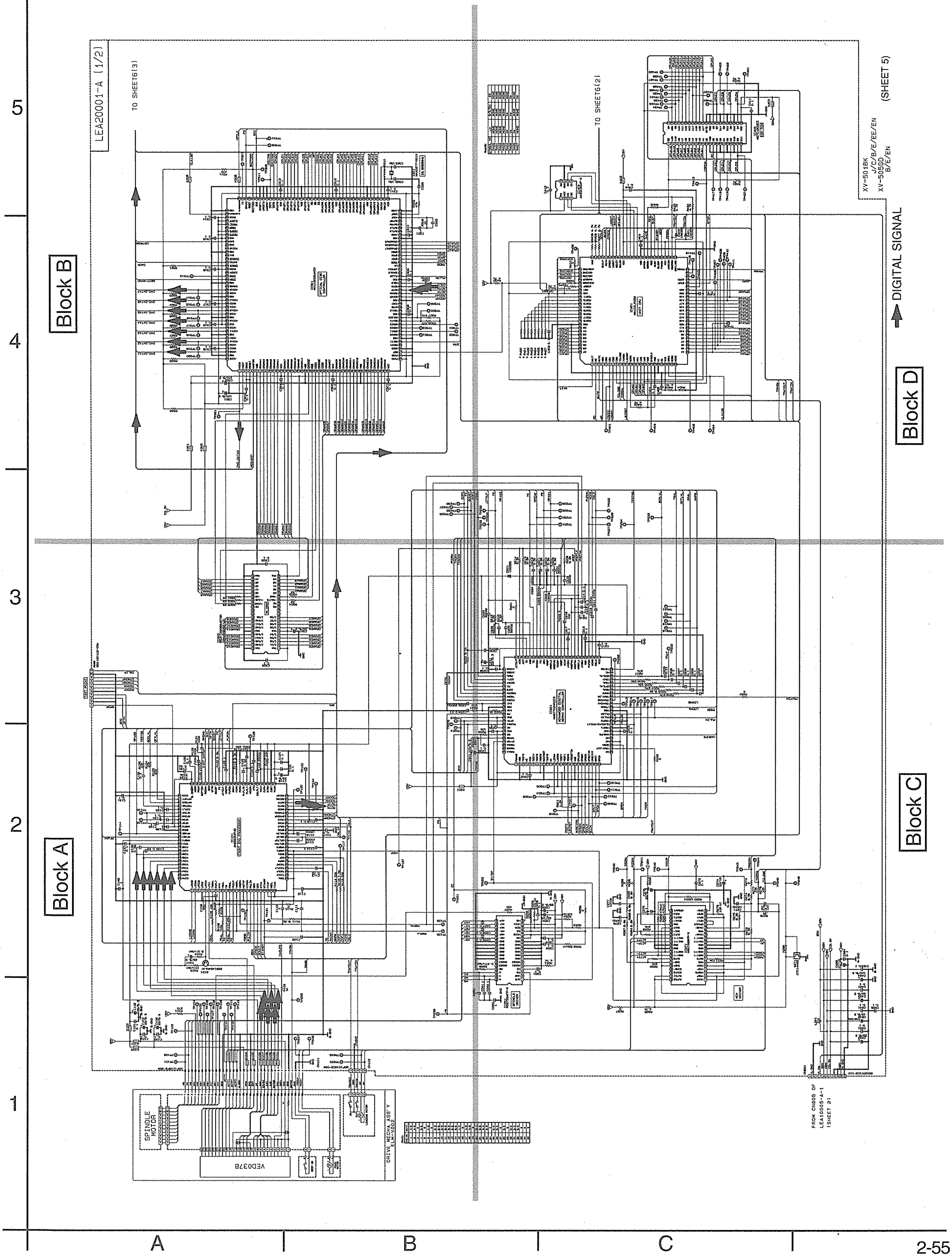

LEA10006-6
H_MUTE
HP.MUTE Q851,Q852 2SD1302(S,T)
FROM CN704 OF LEA10006-A-1 (AUDIO) SHEET 4
CN851
H.PHONE OUT (L)
H.PHONE OUT (R)
+12V
-12V
HP.AMP IC850(1/2) NJM4580M
HP.AMP IC850(2/2) NJM4580M
J803
H.PHONE OUT

■SYSTEM CONTROL & FL DRIVER Section

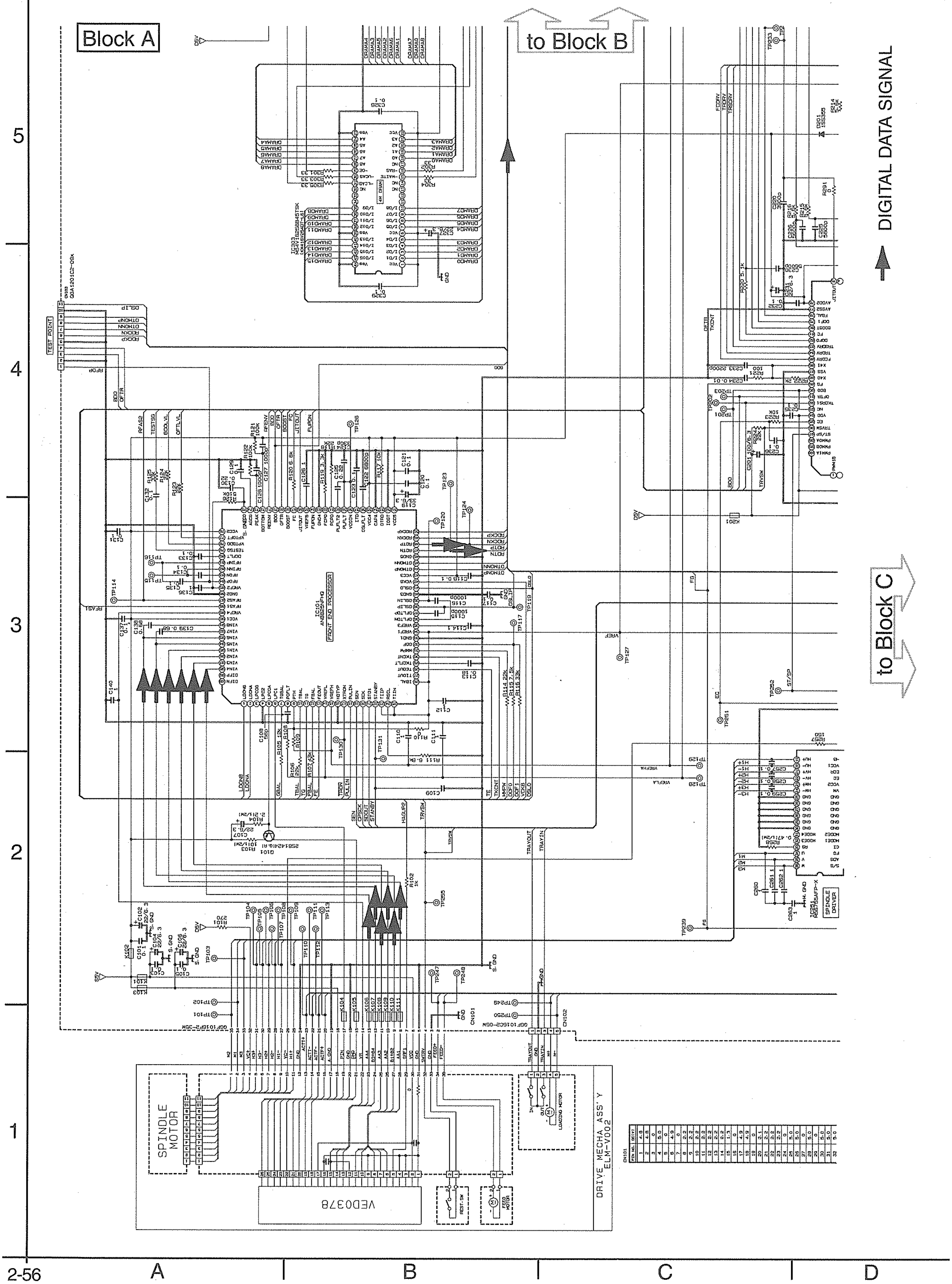

LEA10006-A-1
TO CN831 OF LEA10005-3 (FRONT) SHEET 1
CN703
IND.
KEY MATRIX
SDATA,FLCLK,CS,POR
SHUTTLE,REMO
HP.MUT
RESET IC717 PST574CMT-X
EEPROM IC715 TC75H08F-X
+5V
+5V REG. IC718 NJM78M05
TO CN801 OF LEA10005-A-1 (SUPPLY) SHEET 2
+12V
V12V
-12V
FW702
POWER SUPPLY
OSC X701 16MHz
TO FW601 OF LEA10006-2 (VIDEO) SHEET 3
CN702
CS4,VS1,VCD
RXD,SCK
V+12V
SYSTEM CPU IC714
PLL BLOCK D701-D703 L703
PDO
XIN
H.P MUTE Q724 D717,D718
H.MUTE
LOUT
ROUT
+12V
-12V
CN704
H.PHONE OUT
DAC CONTROL
DAC IC702 MN35503
LPF IC703,IC704
MUTE Q708 Q711,Q712 D706,D707
MUTE1
TO CN851 OF LEA10006-6 (H.PHONE) SHEET 1
FROM CN502 OF LEA20001-A (MAIN) SHEET 5
F.RESPONCE SW. Q704,Q705,Q706
SYSTEM CPU INTERFACE
AUDIO DATA IN
POWER ON
CN701
FS2
ANALOG AUDIO OUT
J702
LEC958
IC715 TC7S08F
T701 QQR0880-001
J705
OPTICAL DIGITAL OUT J706 GP1F32T
COAXIAL DIGI-OUT
FW703
TO CN602 OF LEA10006-2 SHEET 3
OPTICAL DIGITAL OUT
SHUTTLE
REMOTE CONTROL RECEIVER IC832 GP1U271X
LED D833~D836,D848
LED D839,D849~D851
D5V
LEA10005-5
FROM CN703 OF LEA10006-A-1 (AUDIO) SHEET 4
CN831
REMO
IND.
SDATA,FLSCK,CS,POR
KEY MATRIX
LED DRIVER Q831~Q836
LED DRIVER Q837~Q840
ON SCREEN LED D852
D5V
CN834
FW834
SHUTTLE S831
FL DRIVER IC831 M66004SP
LEA10005-4
KEY MAYRIX
FL DISPLAY D1831 QLF0049-001
POWER LED D831
CN832
CN833
POWER KEY S867
TO CN806 OF LEA10005-A-1 (SUPPLY) SHEET 2
F1
F2
-VDSP
B5V
D5V
FW831
B5V
D5V
LEA10005-3
5
4
3
2
1
A
B
C
D

Standard schematic diagrams

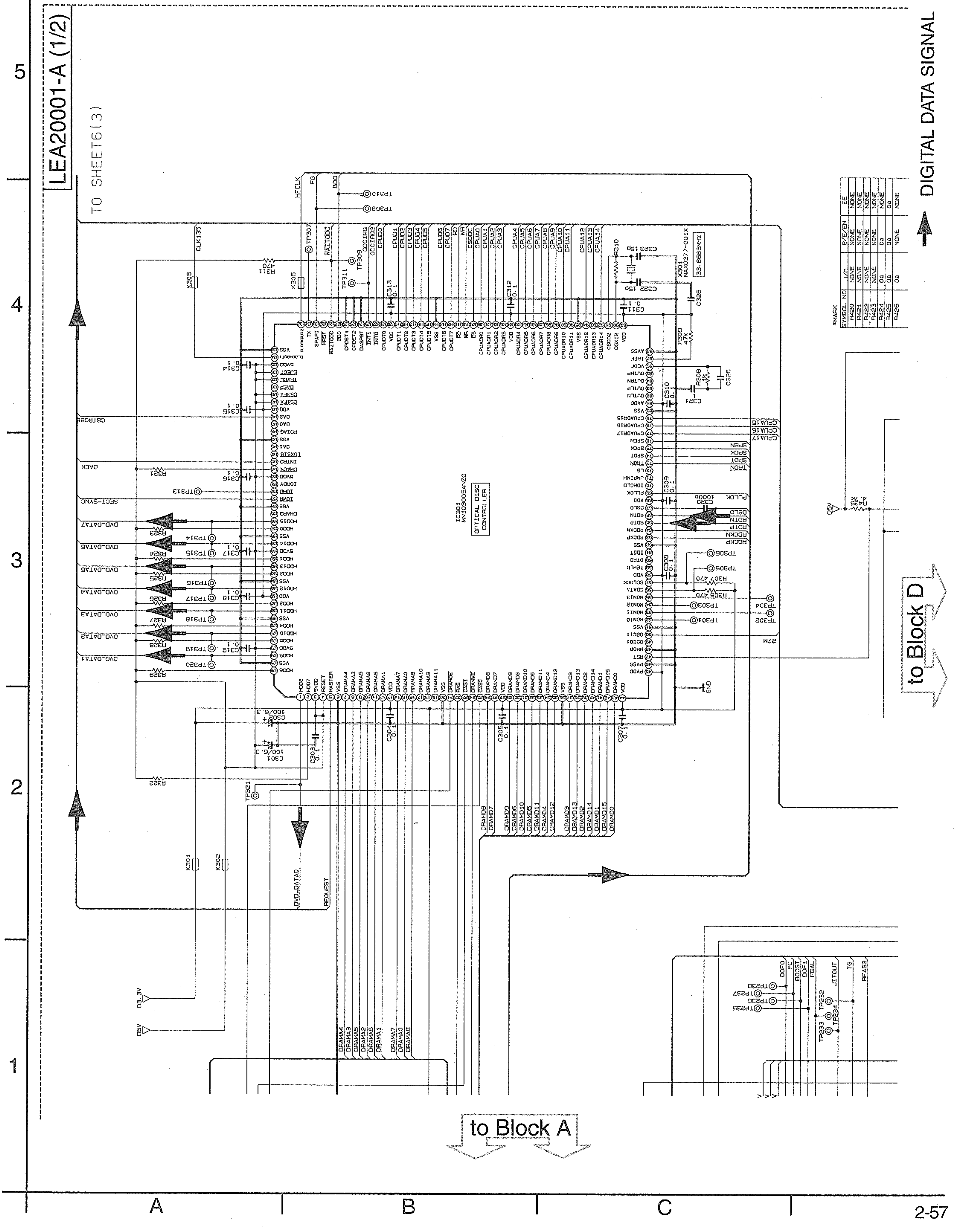
■Signal demodulation & control section(MAIN block)


LEA20001-A (1/2)
TO SHEET6(3)
TO SHEET6(2)
(SHEET 5)
XV-501BK J/C/B/E/EE/EN
XV-505GD B/E/EN
DIGITAL SIGNAL
Block A
Block B
Block C
Block D
SPINDLE MOTOR
VED0378
DRIVE MECHA ASS'Y ELM-V002
FROM CN805 OF LEA10005-A-1 (SHEET 2)
5
4
3
2
1
A
B
C

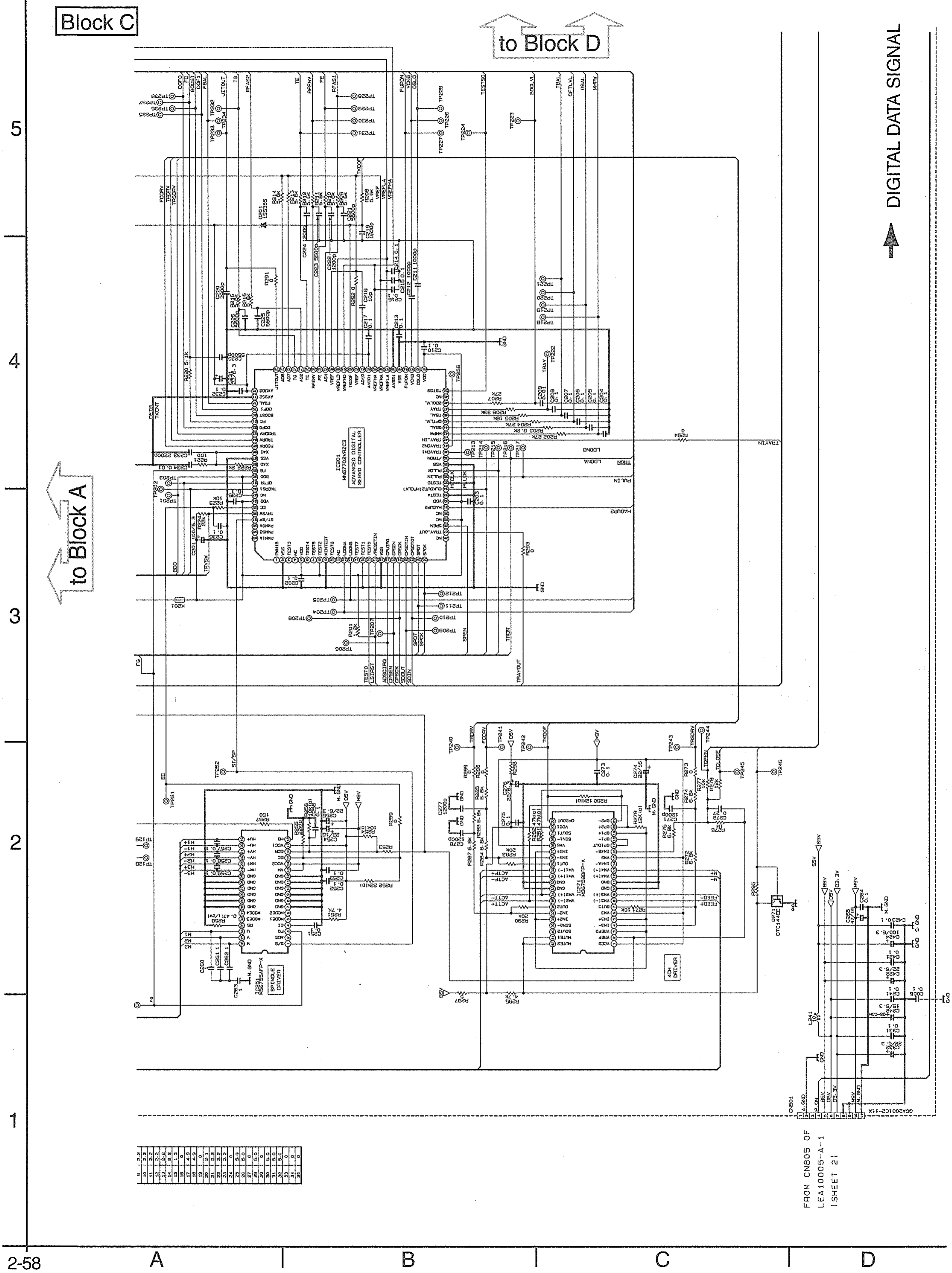
1.Siganl demodulation & control section (A Block)


Block A
to Block B
DIGITAL DATA SIGNAL
to Block C
TEST POINT
IC101
FRONT END PROCESSOR
SPINDLE DRIVER
SPINDLE MOTOR
DRIVE MECHA ASS'Y
ELM-V002
VED0378
LOADING MOTOR
FEED MOTOR
REST. SW
5
4
3
2
1
A
B
C
D

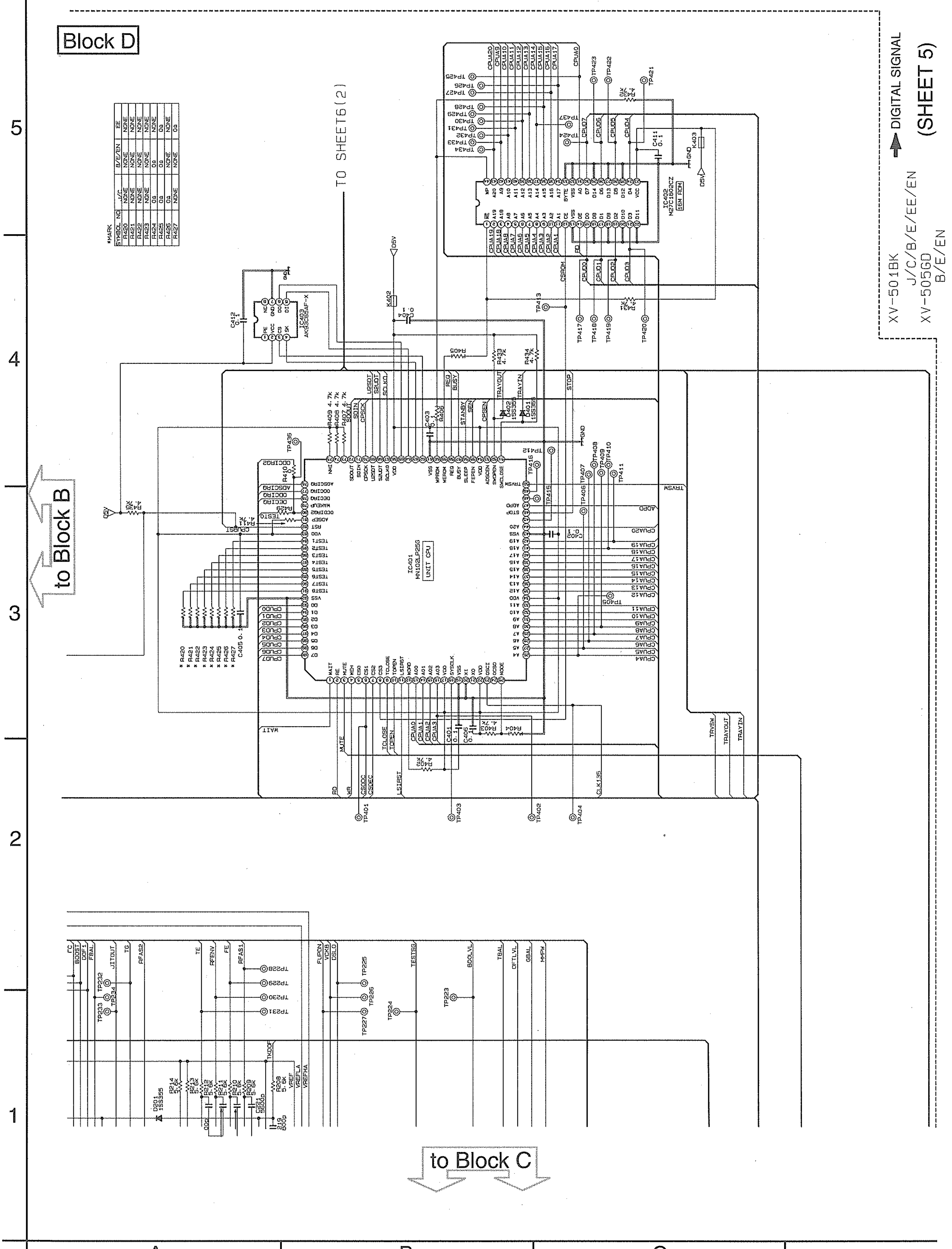
2.Siganl demodulation & control section (B Block)


Block B
LEA20001-A (1/2)
TO SHEET6(3)
DIGITAL DATA SIGNAL
IC301
MN103S005ANZG
OPTICAL DISC CONTROLLER
X301
NAX0277-001X
33.8688MHz
CSTROBE
DACK
SECT-SYNC
DVD-DATA7
DVD-DATA6
DVD-DATA5
DVD-DATA4
DVD-DATA3
DVD-DATA2
DVD-DATA1
DVD_DATA0
REQUEST
D3.3V
D5V
HFCLK
FG
BDO
CLK135
TP310
TP308
TP307
TP309
TP311
TP313
TP314
TP315
TP316
TP317
TP318
TP319
TP320
TP321
TP301
TP302
TP303
TP304
TP305
TP306
K301
K302
K305
K306
R311
470
C313
0.1
C312
0.1
C311
0.1
C322 15p
C323 15p
R310
C326
R309
47K
R308
C325
C321
C310
0.1
C309
0.1
C320
1000p
C308
0.1
R307 470
R306 470
C301
100/6.3
C302
100/6.3
C303
0.1
C304
0.1
C305
0.1
C307
0.1
C314
0.1
C315
0.1
C316
0.1
C317
0.1
C318
0.1
C319
0.1
R322
R323
R324
R325
R326
R327
R328
R329
R331
CPUA15
CPUA16
CPUA17
SPEN
SPCK
SPDT
TRON
PLLCK
DSLO
RDTN
RDTP
RDCKN
RDCKP
27M
GND
D5V
R435
4.7K
to Block D
to Block A
*MARK
SYMBOL NO
I/C
B/E/EN
EE
R420
R421
R422
R423
R424
R425
R426
NONE
0Ω
DRAMA4
DRAMA3
DRAMA5
DRAMA2
DRAMA6
DRAMA1
DRAMA7
DRAMA0
DRAMA8
DRAMD8
DRAMD7
DRAMD9
DRAMD6
DRAMD10
DRAMD5
DRAMD11
DRAMD4
DRAMD12
DRAMD3
DRAMD13
DRAMD2
DRAMD14
DRAMD1
DRAMD15
DRAMD0
DOFO
FC
BOOST
DOF1
FBAL
JITOUT
TG
RFAS2
TP232
TP233
TP234
TP235
TP236
TP237
TP238
5
4
3
2
1
A
B
C

3.Siganl demodulation & control section (C Block)


Block C
to Block D
DIGITAL DATA SIGNAL
to Block A
to Block A
IC201
ADVANCED DIGITAL SERVO CONTROLLER
SPINDLE DRIVER
4CH DRIVER
FROM CN805 OF
LEA10005-A-1
(SHEET 2)
5
4
3
2
1
A
B
C
D

4.Siganl demodulation & control section (D Block)

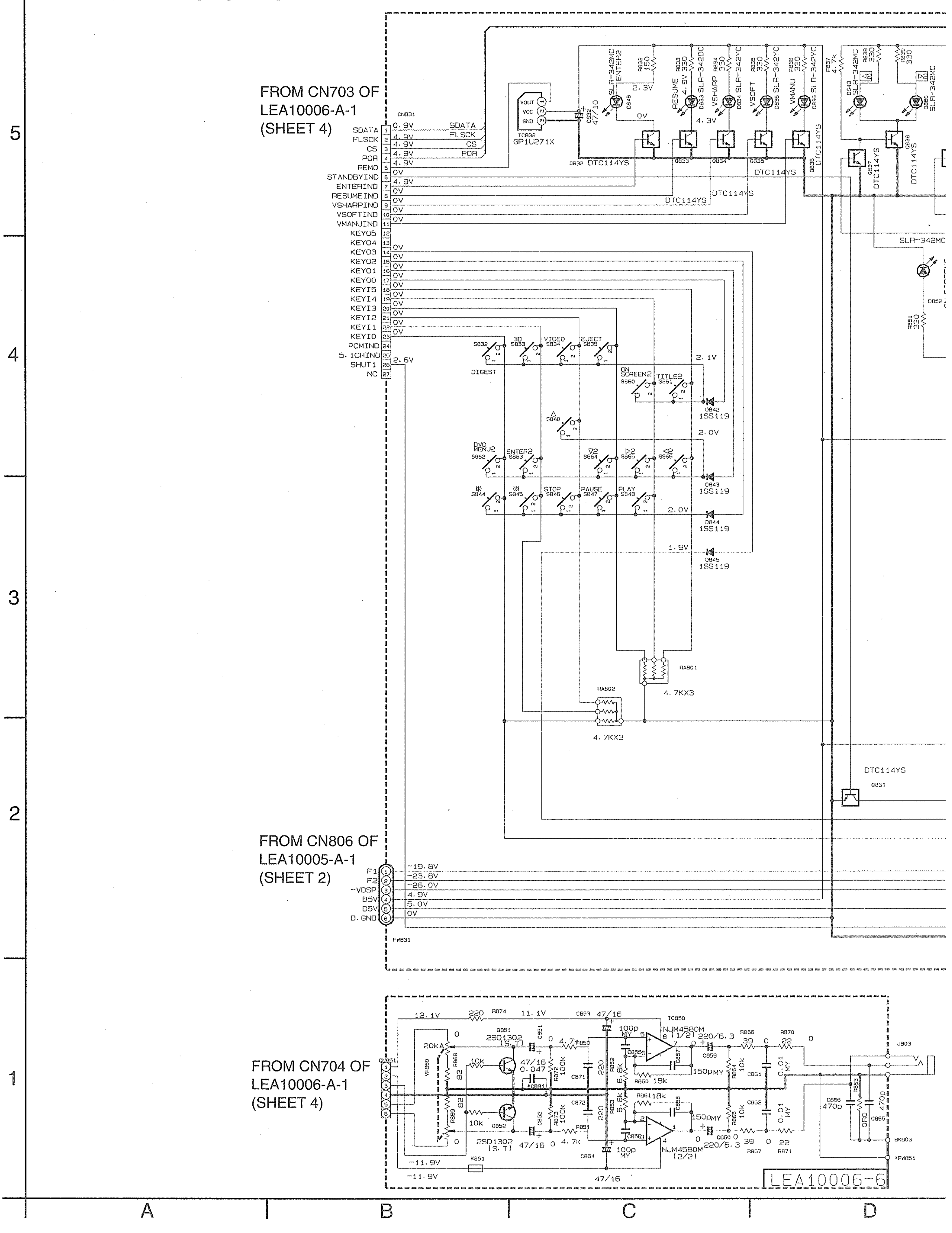

Block D
TO SHEET6(2)
DIGITAL SIGNAL
(SHEET 5)
XV-501BK
J/C/B/E/EE/EN
XV-505GD
B/E/EN
to Block B
to Block C
IC401
MN102LP25G
UNIT CPU
IC402
M27C1602CZ
16M ROM
IC403
AK93C65AF-X
5
4
3
2
1
A
B
C

*MARK

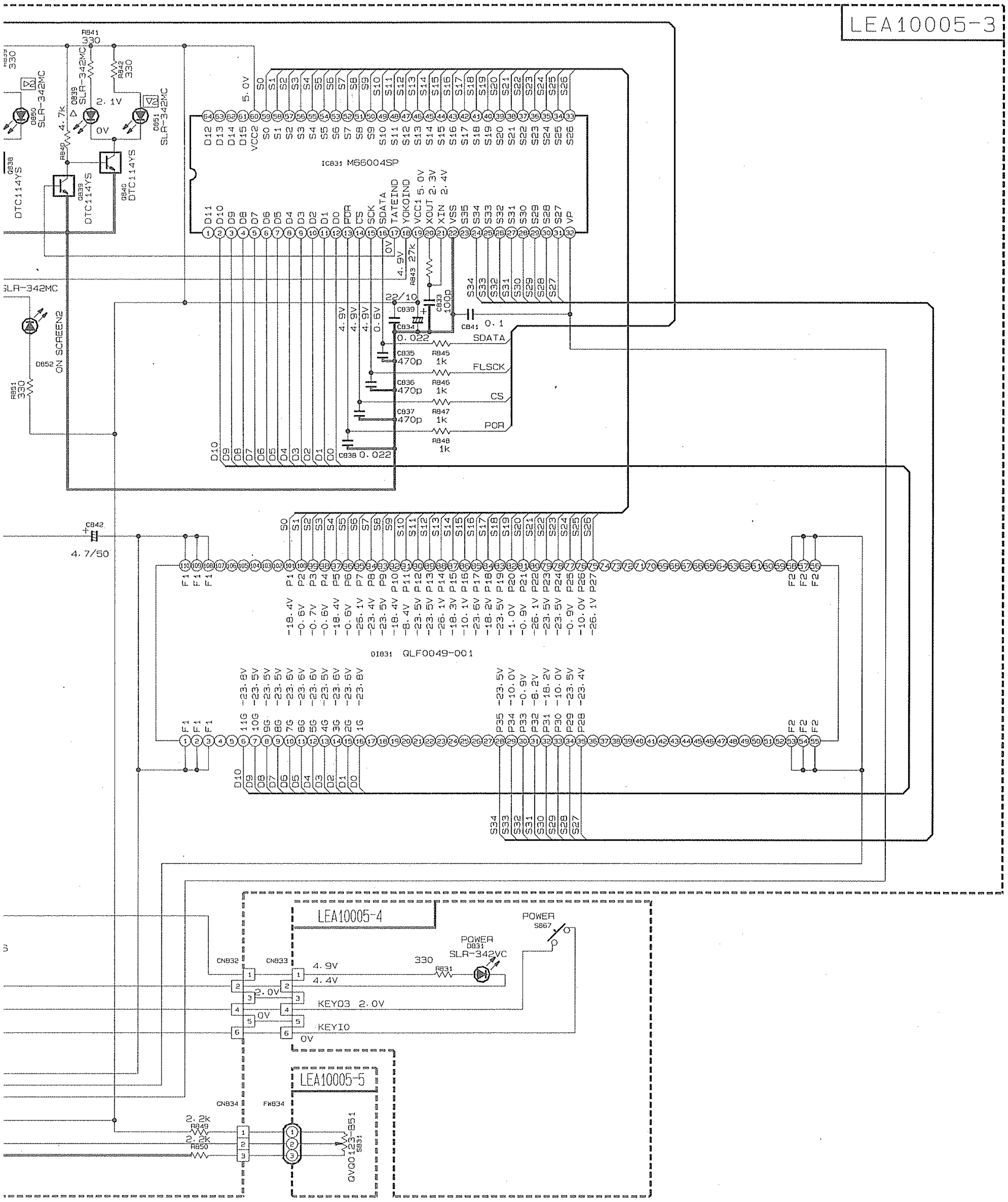
SYMBOL NO	J/C	B/E/EN	EE
R420	NONE	NONE	NONE
R421	NONE	NONE	NONE
R422	NONE	NONE	NONE
R423	NONE	NONE	NONE
R424	0Ω	0Ω	NONE
R425	0Ω	0Ω	0Ω
R426	0Ω	NONE	NONE
R427	NONE	NONE	0Ω

-MEMO-

■FL Display & operation switch section



FROM CN703 OF
LEA10006-A-1
(SHEET 4)
CN831
SDATA
FLSCK
CS
POR
REMO
STANDBYIND
ENTERIND
RESUMEIND
VSHARPIND
VSOFTIND
VMANUIND
KEYO5
KEYO4
KEYO3
KEYO2
KEYO1
KEYO0
KEYI5
KEYI4
KEYI3
KEYI2
KEYI1
KEYI0
PCMIND
5.1CHIND
SHUT1
NC
IC832
GP1U271X
VOUT
VCC
GND
C832
47/10
D832 DTC114YS
Q833
Q834
Q835
Q836
DTC114YS
Q837
Q838
D848
SLR-342MC
ENTER2
R832
150
RESUME
D833 SLR-342DC
VSHARP
D834 SLR-342YC
VSOFT
D835 SLR-342YC
VMANU
D836 SLR-342YC
D849 SLR-342MC
D850 SLR-342MC
R833 330
R834 330
R835 330
R836 330
R837 4.7k
R838 330
R839 330
SLR-342MC
D852
R851 330
2.3V
0V
4.9V
4.3V
0.9V
2.6V
S832
DIGEST
3D
S833
VIDEO
S834
EJECT
S835
ON SCREEN2
S860
TITLE2
S861
S840
DVD MENU2
S862
ENTER2
S863
S864
S865
S866
S844
S845
STOP
S846
PAUSE
S847
PLAY
S848
2.1V
2.0V
1.9V
D842 1SS119
D843 1SS119
D844 1SS119
D845 1SS119
RA801
4.7KX3
RA802
4.7KX3
DTC114YS
Q831
FROM CN806 OF
LEA10005-A-1
(SHEET 2)
F1
F2
-VDSP
B5V
D5V
D.GND
-19.8V
-23.8V
-26.0V
4.9V
5.0V
0V
FW831
FROM CN704 OF
LEA10006-A-1
(SHEET 4)
CN851
12.1V
11.1V
220
R874
C853 47/16
IC850
NJM4580M
B (1/2)
NJM4580M
(2/2)
VR850
20KA
R868 82
R869 82
Q851
2SD1302
(S.T)
Q852
2SD1302
(S.T)
10k
C851 47/16
C852 47/16
0.047
C891
R872 100k
R873 100k
4.7k
R850
R851
C871 220
C872 220
R852 6.8k
R853 6.8k
100p MY
C855
C856
C858
C857
R860 18k
R861 18k
150pMY
220/6.3
C859
C860
R866 39
R867 39
R864 10k
R865 10k
C861 0.01 MY
C862 0.01 MY
R870 22
R871 22
J803
C866 470p
R863
ORO
470p
C865
BK803
PW851
-11.9V
K851
C854 47/16
-11.9V
LEA10006-6
5
4
3
2
1
A
B
C
D

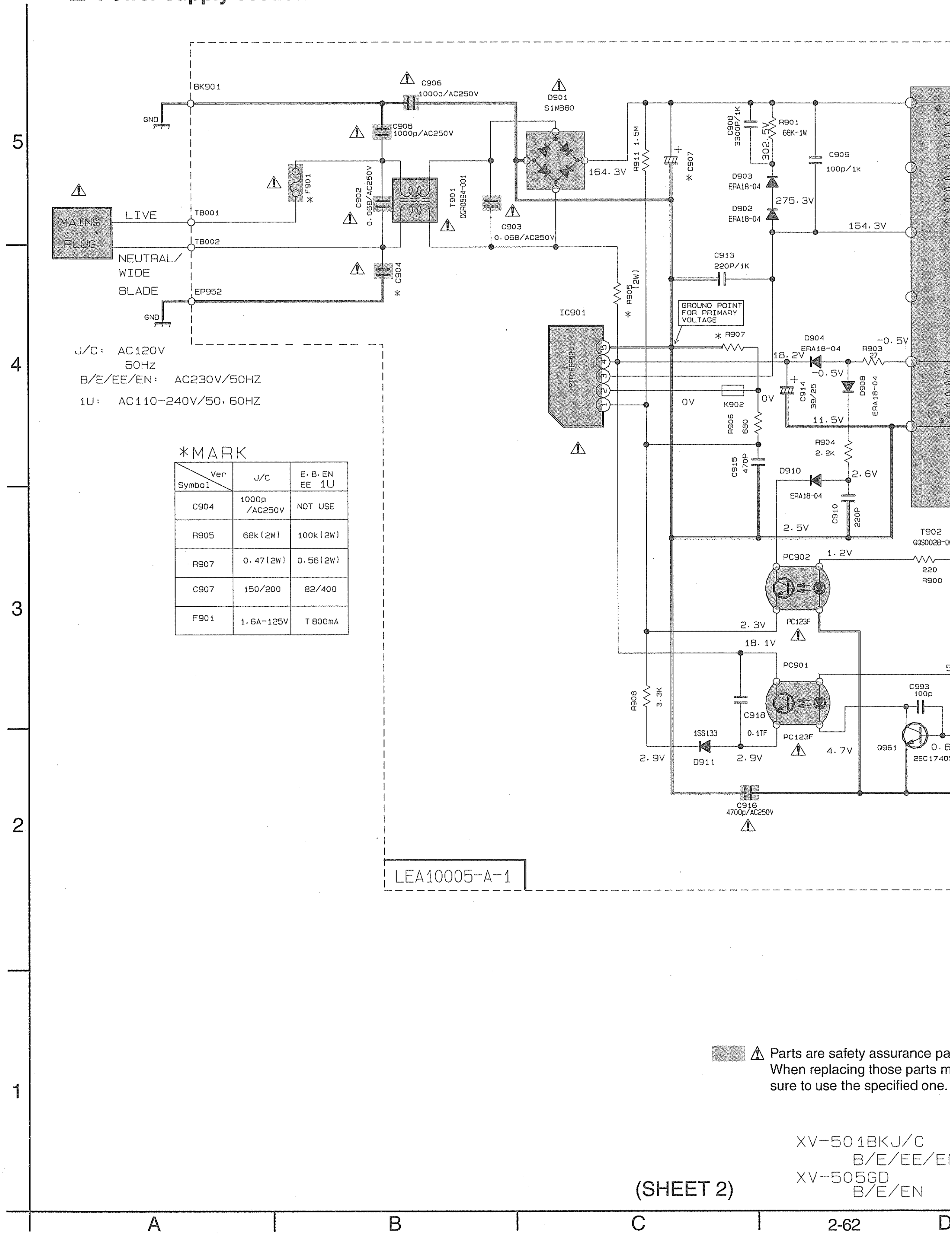

LEA10005-3
IC831 M66004SP
DI831 QLF0049-001
R841 330
R842 330
D850 SLR-342MC
D839 SLR-342MC
D851 SLR-342MC
R840 4.7k
2.1V
0V
Q838 DTC114YS
Q839 DTC114YS
Q840 DTC114YS
SLR-342MC
D852 ON SCREEN2
R851 330
5.0V
R843 27k
4.9V
0V
C839 22/10
C833 100p
C834 0.022
C841 0.1
C835 470p
R845 1k
C836 470p
R846 1k
C837 470p
R847 1k
R848 1k
C838 0.022
SDATA
FLSCK
CS
POR
C842 4.7/50
LEA10005-4
POWER S867
POWER D831 SLR-342VC
330 R831
CN832
CN833
4.9V
4.4V
2.0V
KEY03 2.0V
0V
KEYIO
0V
LEA10005-5
CN834
FW834
2.2k R849
2.2k R850
S831 QVG0123-B51

*MARK ONLY FOR B/E/EE/EN

XV-501BK
J/C/B/E/EE/EN
XV-505GD
B/E/EN

(SHEET 1)

Power supply section


5
4
3
2
1
A
B
C
D
BK901
GND
MAINS PLUG
LIVE
NEUTRAL/ WIDE BLADE
TB001
TB002
EP952
GND
F901 *
C906 1000p/AC250V
C905 1000p/AC250V
C902 0.068/AC250V
C904 *
T901 QQR0894-001
C903 0.068/AC250V
D901 S1WB60
164.3V
R911 1.5M
C907 *
C908 3300P/1K
R901 68K-1W
302.5V
D903 ERA18-04
275.3V
D902 ERA18-04
C909 100p/1K
164.3V
C913 220P/1K
R905 (2W) *
IC901
STR-F6652
GROUND POINT FOR PRIMARY VOLTAGE
* R907
D904 ERA18-04
-0.5V
R903 27
18.2V
-0.5V
C914 39/25
D908 ERA18-04
0V
K902
0V
R906 680
11.5V
R904 2.2K
C915 470P
D910 ERA18-04
2.6V
C910 220P
2.5V
T902 QQS0028-0
PC902
1.2V
220 R900
2.3V
PC123F
18.1V
PC901
C993 100p
R908 3.3K
C918 0.1TF
1SS133
PC123F
4.7V
Q961
2SC1740
0.6
2.9V
D911
2.9V
C916 4700p/AC250V
LEA10005-A-1

J/C: AC120V
60Hz
B/E/EE/EN: AC230V/50HZ
1U: AC110-240V/50.60HZ

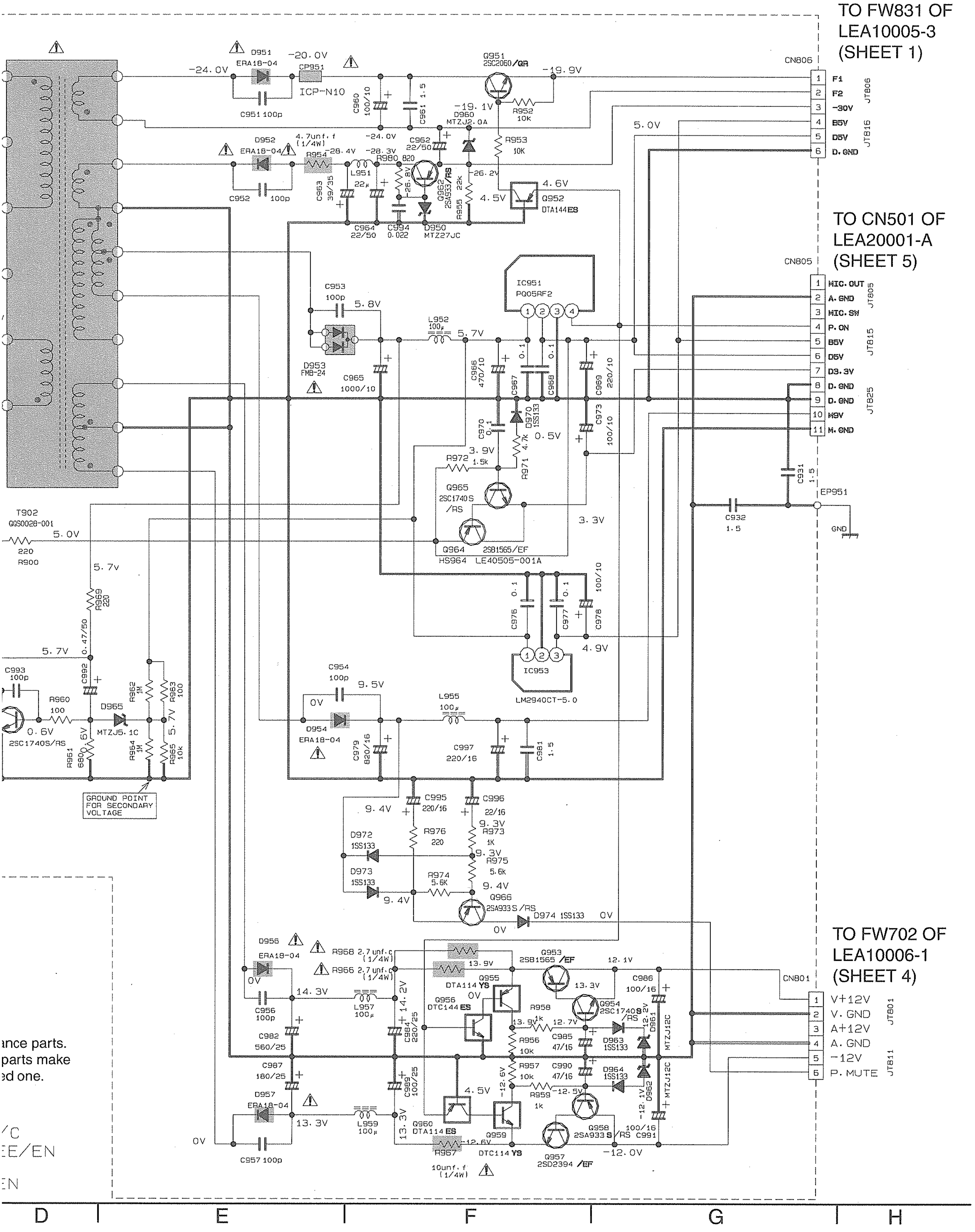
*MARK

Ver / Symbol	J/C	E.B.EN EE 1U
C904	1000p /AC250V	NOT USE
R905	68k(2W)	100k(2W)
R907	0.47(2W)	0.56(2W)
C907	150/200	82/400
F901	1.6A-125V	T 800mA

▨ ⚠ Parts are safety assurance pa
When replacing those parts m
sure to use the specified one.

XV-501BKJ/C
B/E/EE/E
XV-505GD
B/E/EN

(SHEET 2)

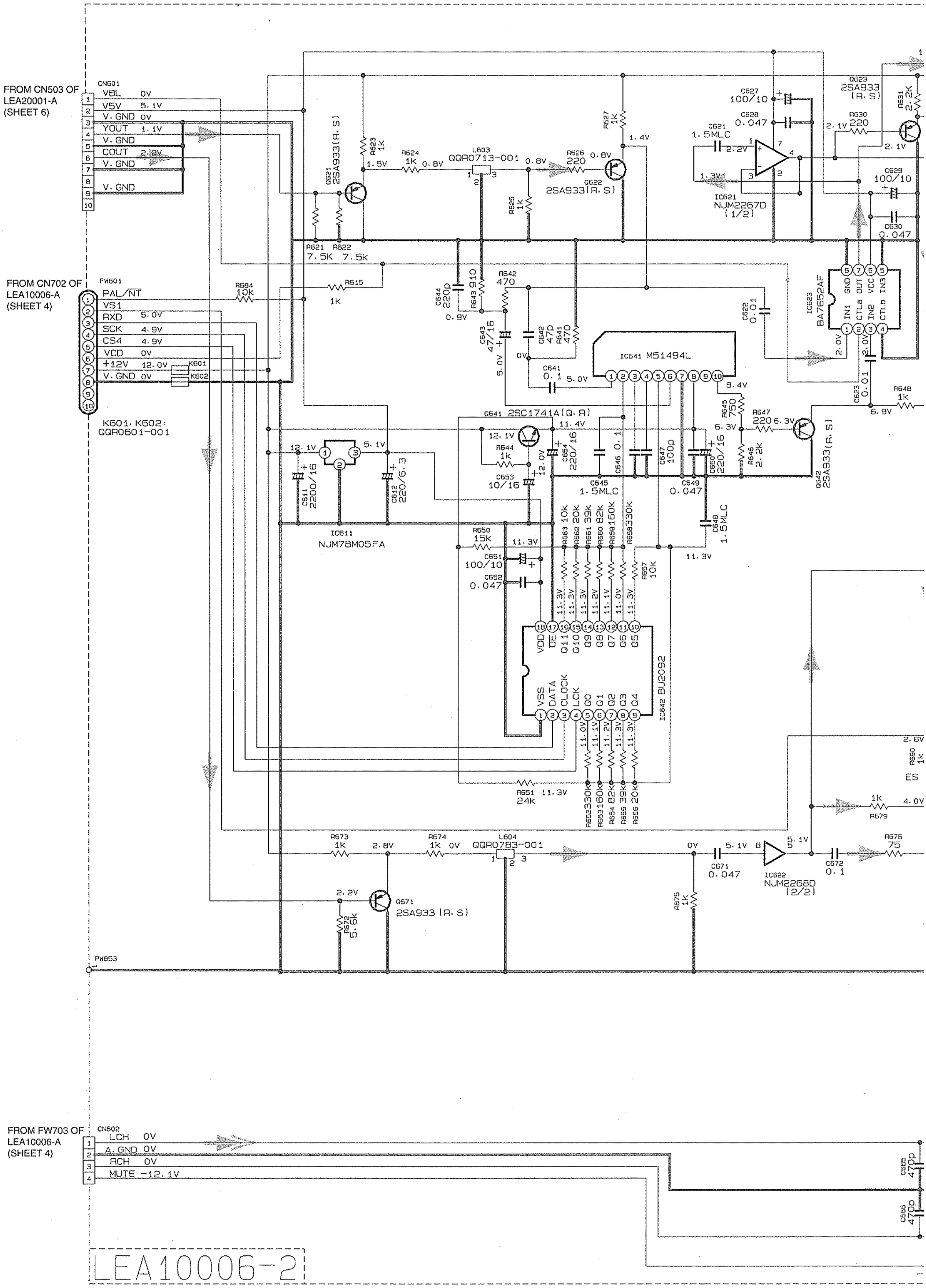

TO FW831 OF
LEA10005-3
(SHEET 1)
CN806
1 F1
2 F2
3 -30V
4 B5V
5 D5V
6 D.GND
JT806
JT816
TO CN501 OF
LEA20001-A
(SHEET 5)
CN805
1 MIC.OUT
2 A.GND
3 MIC.SW
4 P.ON
5 B5V
6 D5V
7 D3.3V
8 D.GND
9 D.GND
10 M9V
11 M.GND
JT805
JT815
JT825
TO FW702 OF
LEA10006-1
(SHEET 4)
CN801
1 V+12V
2 V.GND
3 A+12V
4 A.GND
5 -12V
6 P.MUTE
JT801
JT811
T902
QQS0028-001
D951 ERA18-04
-20.0V
-24.0V
CP951
ICP-N10
C951 100p
C960 100/10
C961 1.5
Q951 2SC2060/QR
-19.9V
-19.1V
D960 MTZJ2.0A
R952 10K
R953 10K
-24.0V
C962 22/50
D952 ERA18-04
4.7unf.f (1/4W)
R954
-28.4V
-28.3V
R980 820
L951 22μ
C952 100p
C963 39/35
-26.8V
Q962 2SA933/RS
-26.2V
R955 22k
4.5V
4.6V
Q952 DTA144ES
C964 22/50
C994 0.022
D950 MTZ27JC
5.0V
IC951 PQ05RF2
C953 100p
5.8V
L952 100μ
5.7V
D953 FMB-24
C965 1000/10
C966 470/10
C967 0.1
C968 0.1
C969 220/10
C970 0.1
D970 1SS133
C973 100/10
R971 4.7k
0.5V
3.9V
R972 1.5k
Q965 2SC1740S/RS
Q964 2SB1565/EF
HS964 LE40505-001A
3.3V
C931 1.5
EP951
C932 1.5
GND
R900 220
5.0V
5.7v
R969 220
C975 0.1
C977 0.1
C978 100/10
4.9V
IC953
LM2940CT-5.0
5.7V
C993 100p
C992 0.47/50
R960 100
D965 MTZJ5.1C
R962 1M
R963 100
0.6V
6V
5.7V
2SC1740S/RS
R961 680
R964 1M
R965 10k
GROUND POINT FOR SECONDARY VOLTAGE
C954 100p
9.5V
0V
D954 ERA18-04
L955 100μ
C979 820/16
C997 220/16
C981 1.5
C995 220/16
C996 22/16
9.4V
R976 220
9.3V
R973 1K
D972 1SS133
9.3V
R975 5.6k
D973 1SS133
R974 5.6K
9.4V
9.4V
Q966 2SA933S/RS
D974 1SS133
0V
0V
D956 ERA18-04
R968 2.7unf.c (1/4W)
R966 2.7unf.c (1/4W)
13.9V
Q953 2SB1565/EF
12.1V
0V
14.3V
L957 100μ
14.2V
Q955 DTA114YS
0V
13.3V
C986 100/16
C956 100p
Q956 DTC144ES
R958 1k
Q954 2SC1740S/RS
12.7V
13.9V
12.2V
D961 MTZJ12C
C982 560/25
C984 220/25
R956 10K
C985 47/16
D963 1SS133
C987 180/25
R957 10k
C990 47/16
D964 1SS133
-12.6V
C989 100/25
4.5V
R959 1k
-12.5V
-12.1V
D962 MTZJ12C
D957 ERA18-04
13.3V
L959 100μ
13.3V
Q960 DTA114ES
Q959 DTC114YS
Q958 2SA933S/RS
100/16 C991
0V
C957 100p
R967 10unf.f (1/4W)
-12.6V
Q957 2SD2394/EF
-12.0V
D
E
F
G
H

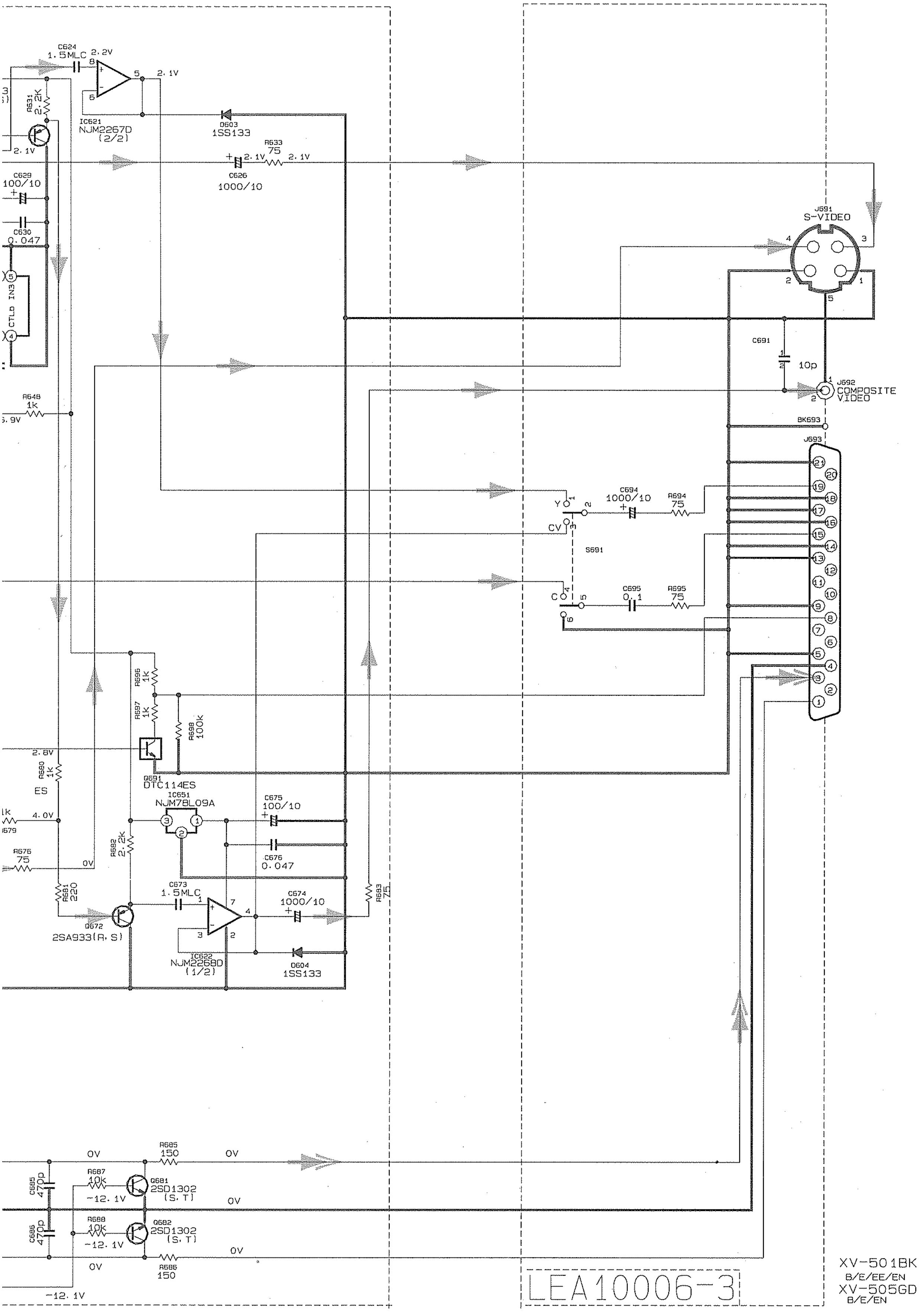
ance parts.
parts make
ed one.

/C
EE/EN

EN

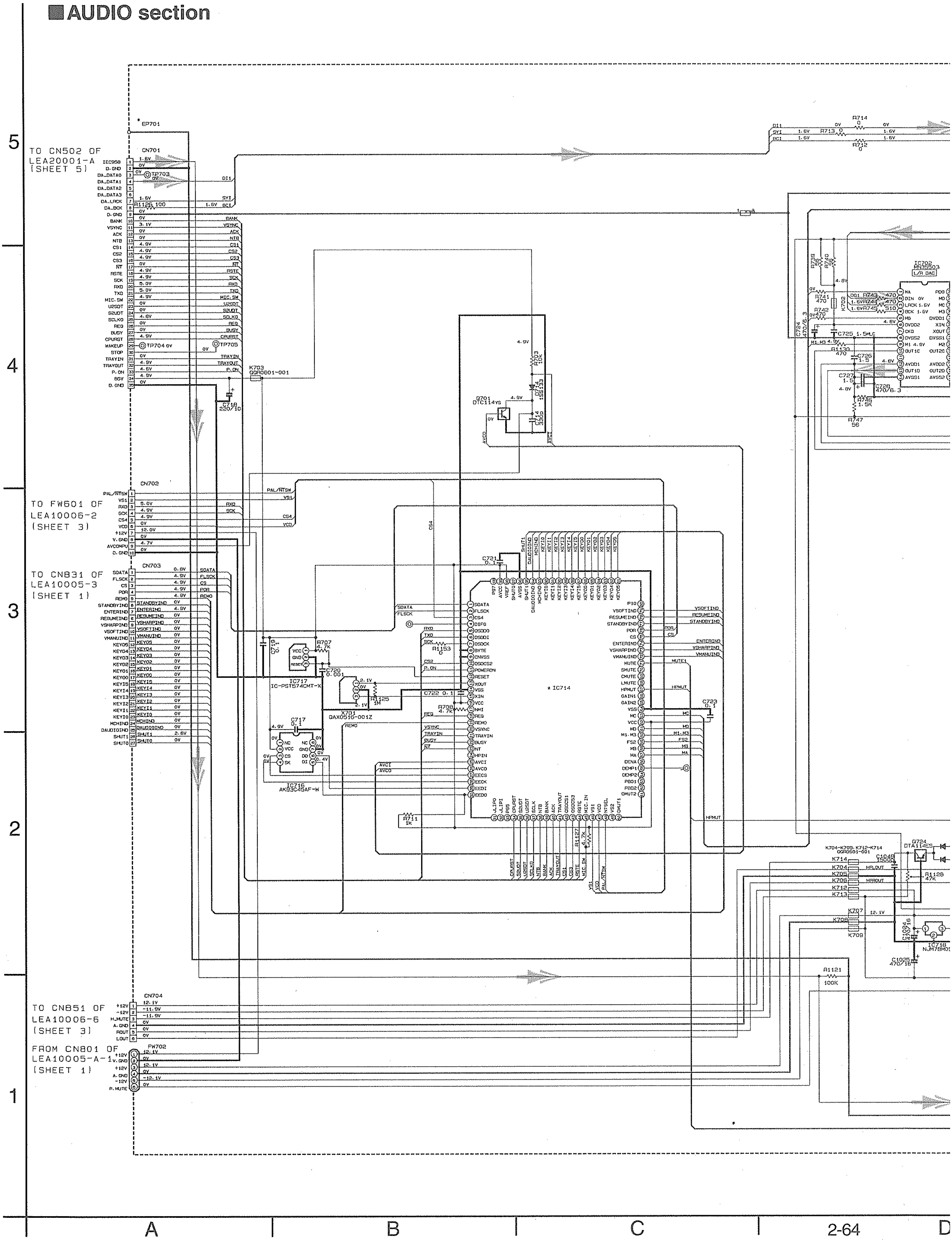
VIDEO section (For Ver.B,E,EE,EN)

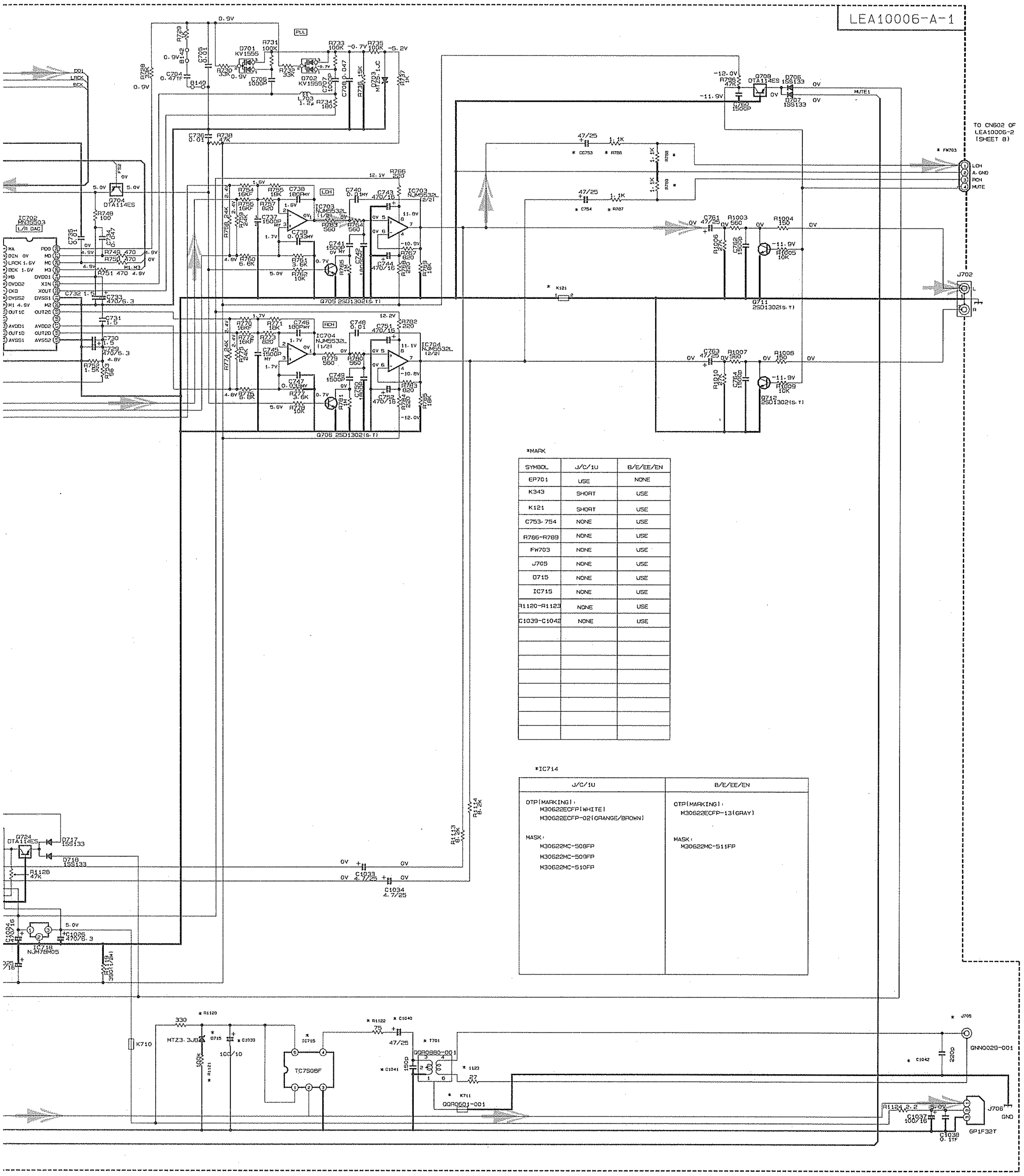

FROM CN503 OF LEA20001-A (SHEET 6)
CN601
VBL 0V
V5V 5.1V
V.GND 0V
YOUT 1.1V
V.GND
COUT 2.2V
V.GND
V.GND
FROM CN702 OF LEA10006-A (SHEET 4)
FW601
PAL/NT
VS1
RXD 5.0V
SCK 4.9V
CS4 4.9V
VCD 0V
+12V 12.0V
V.GND 0V
K601
K602
K601, K602: QQR0601-001
Q621 2SA933(R,S)
R623 1k
R621 7.5K
R622 7.5k
R624 1k 0.8V
L603 QQR0713-001
R626 220 0.8V
Q622 2SA933(R,S)
R627 1k
R625 1k
1.4V
1.5V
C627 100/10
C628 0.047
C621 1.5MLC
IC621 NJM2267D (1/2)
2.2V
1.3V
Q623 2SA933 (R,S)
R630 220
R631 2.2K
2.1V
C629 100/10
C630 0.047
IC623 BA7652AF
GND OUT VCC IN3
IN1 CTLa IN2 CTLb
C622 0.01
C623 0.01
2.0V
R648 1k
6.9V
R684 10k
R615 1k
C644 220p
R643 910
0.9V
R642 470
C643 47/16
C642 47p
R641 470
5.0V
C641 0.1
IC641 M51494L
8.4V
R645 750
R647 220 6.3V
R646 2.2k
Q642 2SA933(R,S)
Q641 2SC1741A(Q,R)
11.4V
12.1V
R644 1k
12.0V
C654 220/16
C653 10/16
C646 0.1
C645 1.5MLC
C647 100p
C649 0.047
C650 220/16
C648 1.5MLC
IC611 NJM78M05FA
C611 2200/16
C612 220/6.3
5.1V
R650 15k
C651 100/10
C652 0.047
11.3V
R663 10k
R662 20k
R661 39k
R660 82k
R659 160k
R658 330k
R657 10k
VDD OE Q11 Q10 Q9 Q8 Q7 Q6 Q5
VSS DATA CLOCK LCK Q0 Q1 Q2 Q3 Q4
IC642 BU2092
R651 24k 11.3V
R652 330k
R653 160k
R654 82k
R655 39k
R656 20k
2.8V
R680 1k
ES
R679 1k
4.0V
R673 1k
R674 1k 0V
L604 QQR0783-001
C671 0.047
5.1V
IC622 NJM2268D (2/2)
C672 0.1
R676 75
R675 1k
Q671 2SA933(R,S)
R672 5.6k
2.2V
PW853
FROM FW703 OF LEA10006-A (SHEET 4)
CN602
LCH 0V
A.GND 0V
RCH 0V
MUTE -12.1V
C685 470p
C686 470p
LEA10006-2
5
4
3
2
1
A
B
C
D


C624
1.5MLC
2.2V
IC621
NJM2267D
(2/2)
2.1V
R631
2.2K
D603
1SS133
R633
75
2.1V
C626
1000/10
C629
100/10
C630
0.047
CTLD IN3
R648
1k
5.9V
J691
S-VIDEO
C691
10p
J692
COMPOSITE
VIDEO
BK693
J693
C694
1000/10
R694
75
Y
CV
S691
C695
0.1
R695
75
C
R696
1k
R697
1k
R698
100k
2.8V
R680
1k
ES
Q691
DTC114ES
IC651
NJM78L09A
C675
100/10
C676
0.047
4.0V
R679
R676
75
0V
R682
2.2K
R681
220
C673
1.5MLC
C674
1000/10
R683
75
Q672
2SA933(R,S)
IC622
NJM2268D
(1/2)
D604
1SS133
R685
150
0V
C685
470p
R687
10k
Q681
2SD1302
(S,T)
-12.1V
C686
470p
R688
10k
Q682
2SD1302
(S,T)
R686
150
-12.1V
LEA10006-3
XV-501BK
B/E/EE/EN
XV-505GD
B/E/EN

AUDIO SIGNAL VIDEO SIGNAL (SHEET 3)

AUDIO section


5
4
3
2
1
A
B
C
D
TO CN502 OF
LEA20001-A
(SHEET 5)
EP701
CN701
TO FW601 OF
LEA10006-2
(SHEET 3)
CN702
TO CN831 OF
LEA10005-3
(SHEET 1)
CN703
TO CN851 OF
LEA10006-6
(SHEET 3)
CN704
FROM CN801 OF
LEA10005-A-1
(SHEET 1)
FW702
IC714
IC717
IC-PST574CMT-X
IC716
AK93C45AF-W
X701
QAX0516-001Z
Q701
DTC114YS
D714
1SS133
IC702
L/R DAC
K703
QQR0601-001
Q724
DTA114ES
IC718
NJM78M0
R1121
100K
R1128
47K
K704-K709,K712-K714
QQR0601-001
K714
K704
K705
K706
K712
K713
K707
K708
K709


LEA10006-A-1
PLL
IC702 MN35503 L/R DAC
Q704 DTA114ES
LCH
IC703 NJM5532L (1/2)
IC703 NJM5532L (2/2)
Q705 2SD1302(S.T)
RCH
IC704 NJM5532L (1/2)
IC704 NJM5532L (2/2)
Q706 2SD1302(S.T)
Q708 DTA114ES
D706 1SS133
D707 1SS133
MUTE1
TO CN602 OF LEA10006-2 (SHEET 8)
FW703
LCH
A.GND
RCH
MUTE
K121
Q711 2SD1302(S.T)
Q712 2SD1302(S.T)
J702
L
R
Q724 DTA114ES
D717 1SS133
D718 1SS133
IC718 NJM78M05
K710
MTZ3.3JB
D715
IC715
TC7S08F
T701
QQR0880-001
QQR0601-001
K711
J705
GNN0029-001
J706
GP1F32T
GND

*MARK

SYMBOL	J/C/1U	B/E/EE/EN
EP701	USE	NONE
K343	SHORT	USE
K121	SHORT	USE
C753·754	NONE	USE
R786~R789	NONE	USE
FW703	NONE	USE
J705	NONE	USE
D715	NONE	USE
IC715	NONE	USE
R1120~R1123	NONE	USE
C1039~C1042	NONE	USE

*IC714

J/C/1U	B/E/EE/EN
OTP(MARKING): M30622ECFP(WHITE) M30622ECFP-02(ORANGE/BROWN) MASK: M30622MC-508FP M30622MC-509FP M30622MC-510FP	OTP(MARKING): M30622ECFP-13(GRAY) MASK: M30622MC-511FP

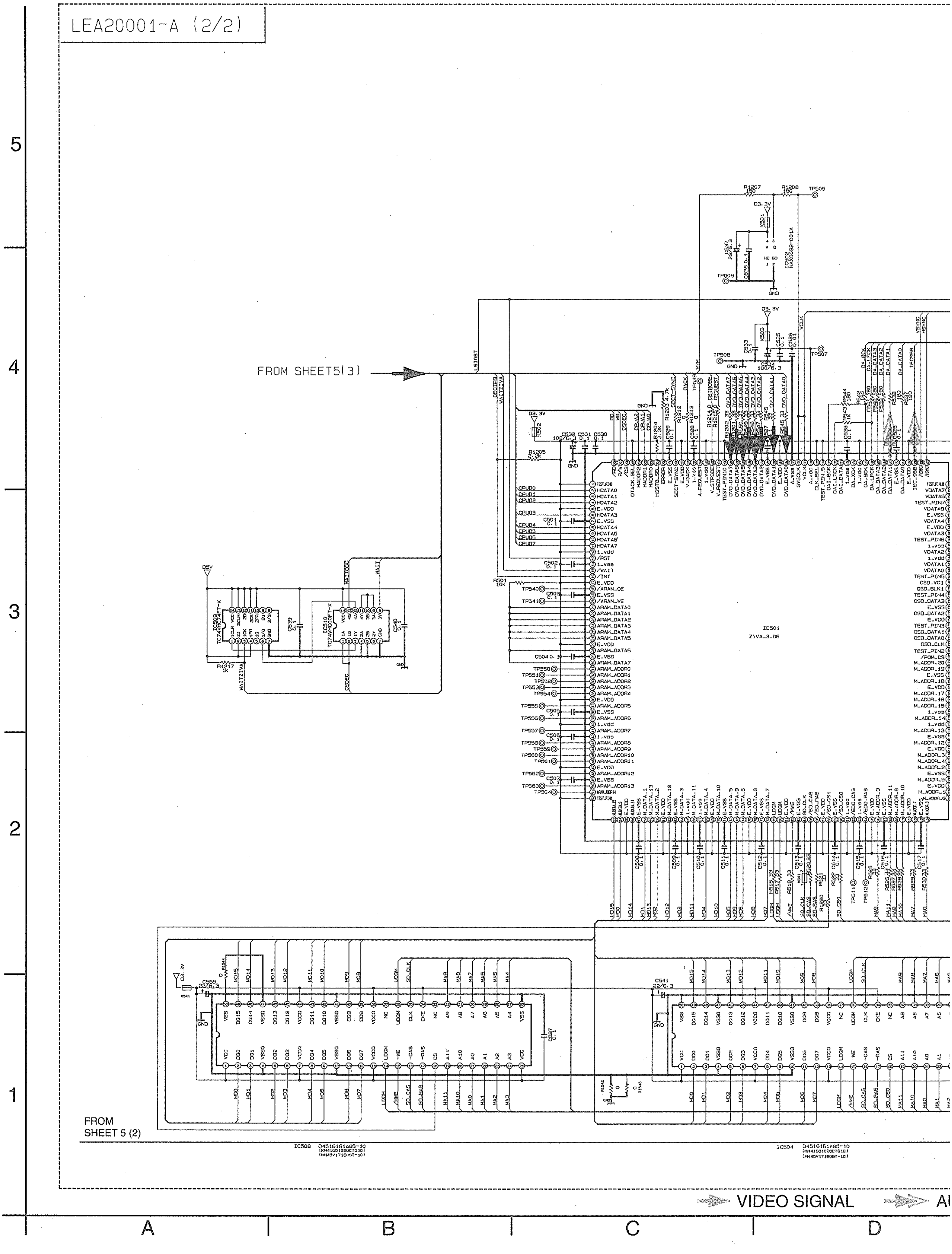
⇒ AUDIO SIGNAL

XV-501BKJ/C
B/E/EE/EN
XV-50560
B/E/EN

(SHEET 4)

D | E | F | G | H

Decoder & graphic controller section


LEA20001-A (2/2)
FROM SHEET5(3)
FROM SHEET 5 (2)
IC501
ZIVA_3_D6
IC502
NAX0592-001X
IC508
TC74VHC74FT-X
IC510
TC74VHC08FT-X
IC503 D4516161AG5-10
IC504 D4516161AG5-10
D3.3V
D5V
TP505
TP506
TP507
TP508
R1207
R1208
R1205
R501 10K
C501
C502
C503
C504
C505
C506
C507
C541 22/6.3
C588 22/6.3
LSIRST
DECREQ
WAITZIVA
WAIT
CSDEC
VCLK
27M
VSYNC
HSYNC
IEC958
DA_BCK
DA_LRCK
DA_DATA3
DA_DATA2
DA_DATA1
DA_DATA0
DVD_DATA7
DVD_DATA6
DVD_DATA5
DVD_DATA4
DVD_DATA3
DVD_DATA2
DVD_DATA1
DVD_DATA0
CPUD0
CPUD1
CPUD2
CPUD3
CPUD4
CPUD5
CPUD6
CPUD7
HDATA0
HDATA1
HDATA2
HDATA3
HDATA4
HDATA5
HDATA6
HDATA7
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/WAIT
/INT
/ARAM_OE
/ARAM_WE
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ARAM_DATA1
ARAM_DATA2
ARAM_DATA3
ARAM_DATA4
ARAM_DATA5
ARAM_DATA6
ARAM_DATA7
ARAM_ADDR0
ARAM_ADDR1
ARAM_ADDR2
ARAM_ADDR3
ARAM_ADDR4
ARAM_ADDR5
ARAM_ADDR6
ARAM_ADDR7
ARAM_ADDR8
ARAM_ADDR9
ARAM_ADDR10
ARAM_ADDR11
ARAM_ADDR12
ARAM_ADDR13
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VDATA6
VDATA5
VDATA4
VDATA3
VDATA2
VDATA1
VDATA0
OSD_VC1
OSD_BLK1
OSD_DATA3
OSD_DATA2
OSD_DATA1
OSD_DATA0
OSD_CLK
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M_ADDR_18
M_ADDR_17
M_ADDR_16
M_ADDR_15
M_ADDR_14
M_ADDR_13
M_ADDR_12
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MD1
MD2
MD3
MD4
MD5
MD6
MD7
MD8
MD9
MD10
MD11
MD12
MD13
MD14
MD15
MA0
MA1
MA2
MA3
MA4
MA5
MA6
MA7
MA8
MA9
MA10
MA11
LDQM
UDQM
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SD_RAS
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AU
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B
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D
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2
3
4
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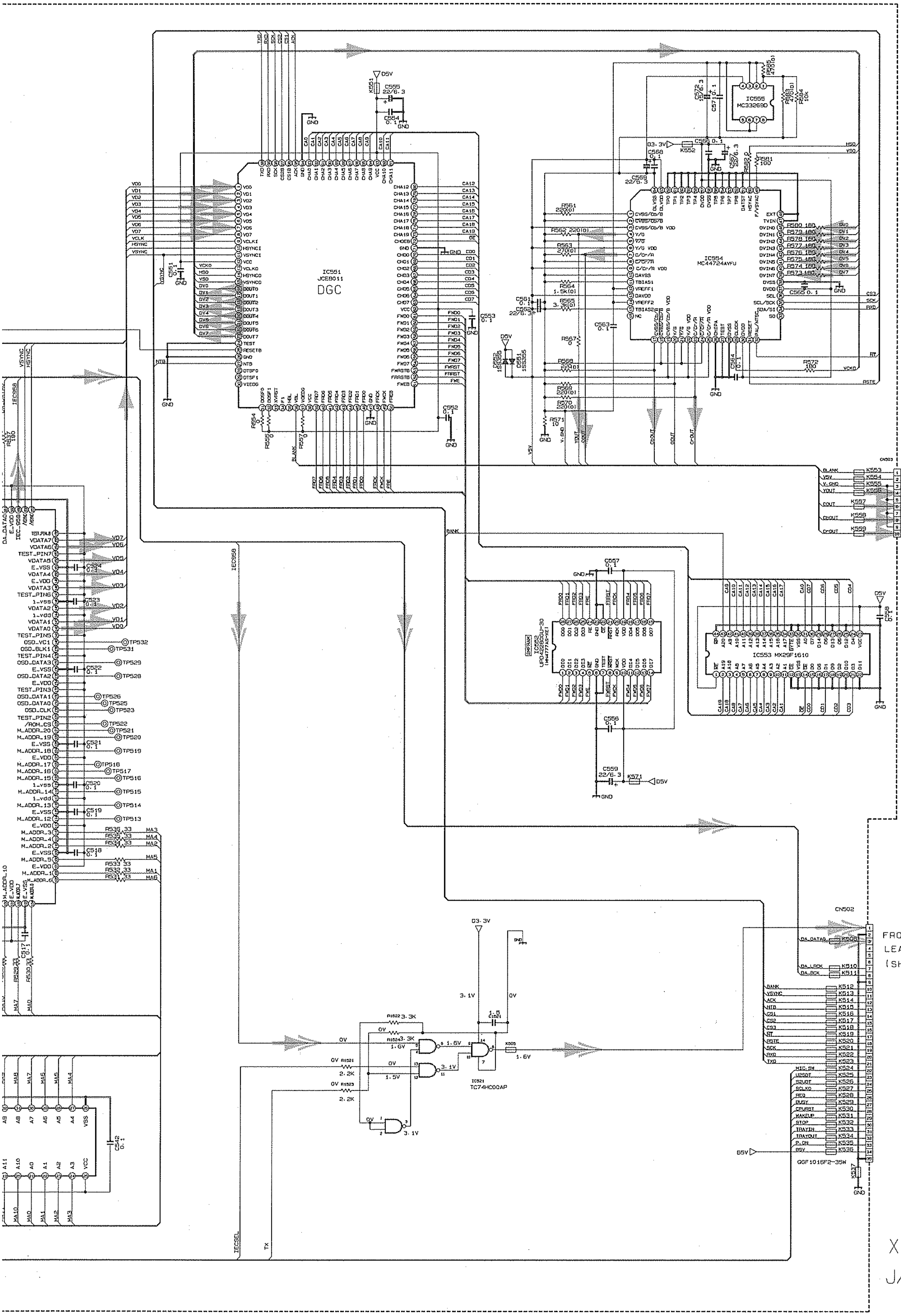
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D5V
D3.3V
B5V
GND
CN503
FROM CN601 OF
LEA10006-2
(SHEET 3)
CN502
FROM CN701 OF
LEA10006-A-1
(SHEET 4)
QGF1016F2-35W
BLANK
VSV
V.GND
YOUT
COUT
CDOUT
CrOUT
IEC958
TX
IECSEL

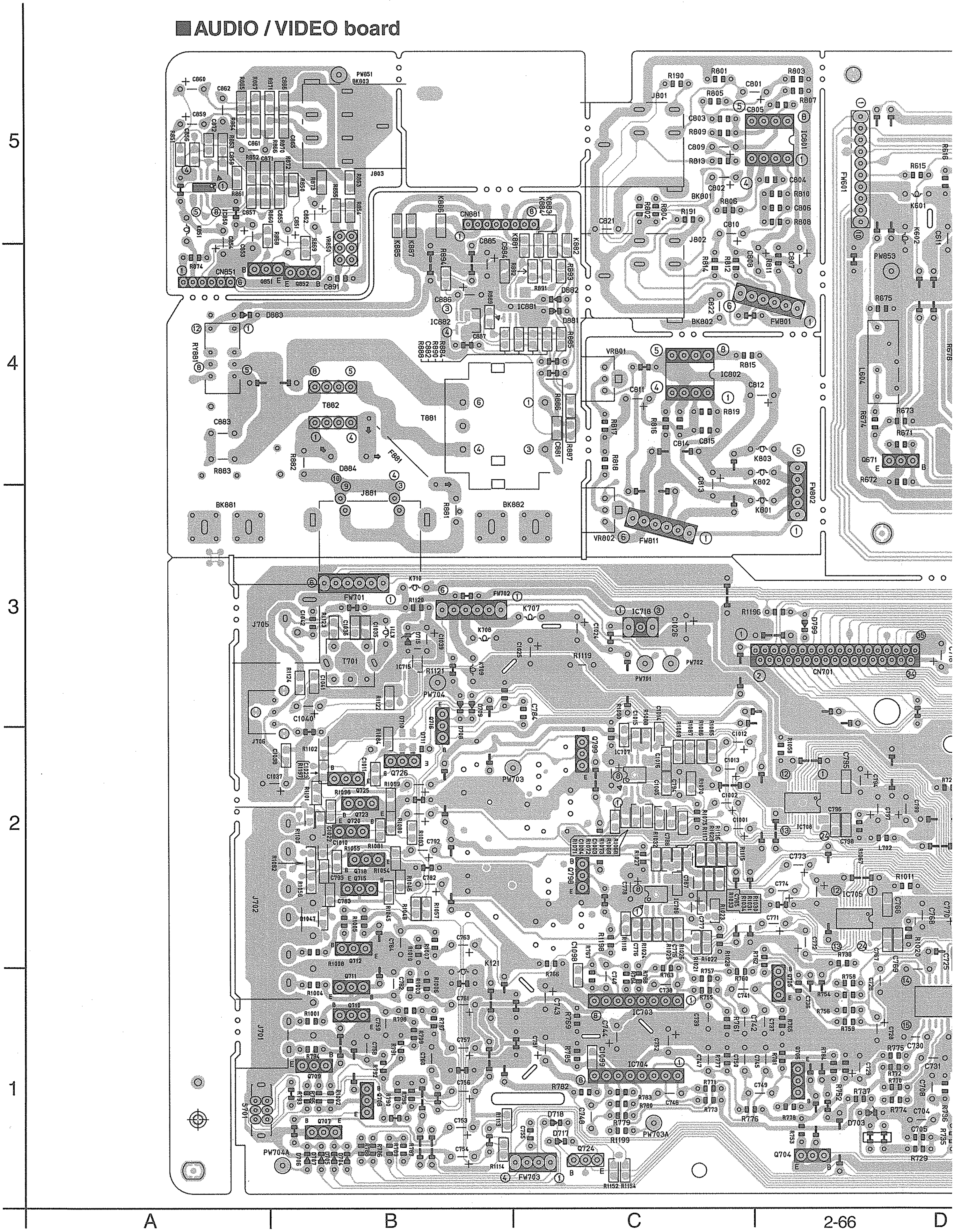
XV-501BK
J/C/B/E/EE/EN

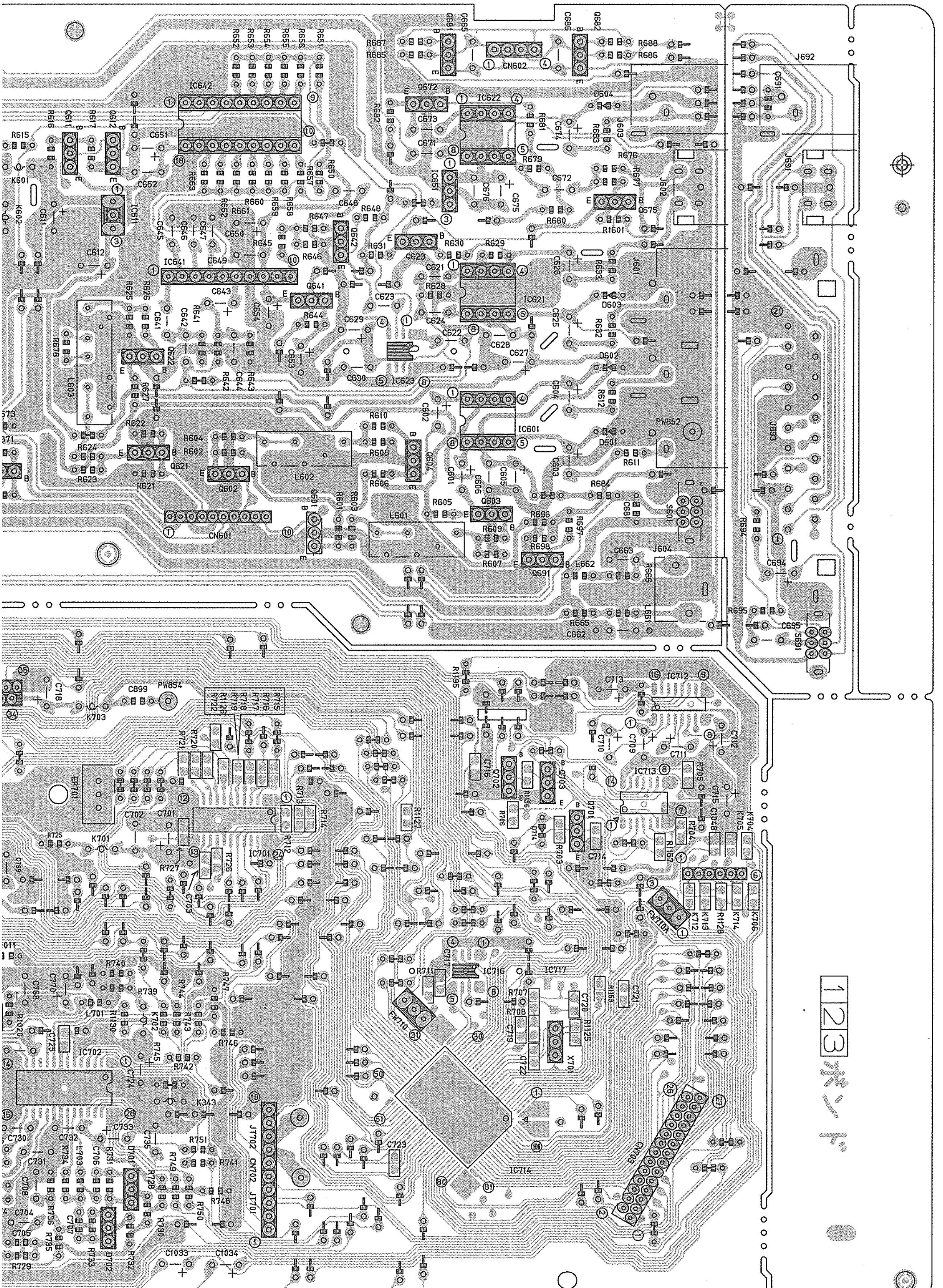
(SHEET 6)

AUDIO SIGNAL ➡ DIGITAL DATA SIGNAL

Printed Circuit Boards

■AUDIO / VIDEO board

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L602
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L662
J692
J691
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R616
R617
R687
R685
R688
R686
R610
R608
R606
R605
R604
R602
R622
R624
R623
R621
R684
R611
R694
R695
R665
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C662
C694
C695
C681
K601
K602
IC712
IC713
IC701
IC702
IC714
IC716
IC717
CN703
CN702
JT701
JT702
EP701
PW854
C899
C713
C718
K703
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K702
K343
Q701
Q702
Q703
X701
D701
D702
PW710A
FW710A
R711
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R708
C719
C720
C721
C722
C723
C724
C725
C733
C735
C1033
C1034
R729
R739
R740
R741
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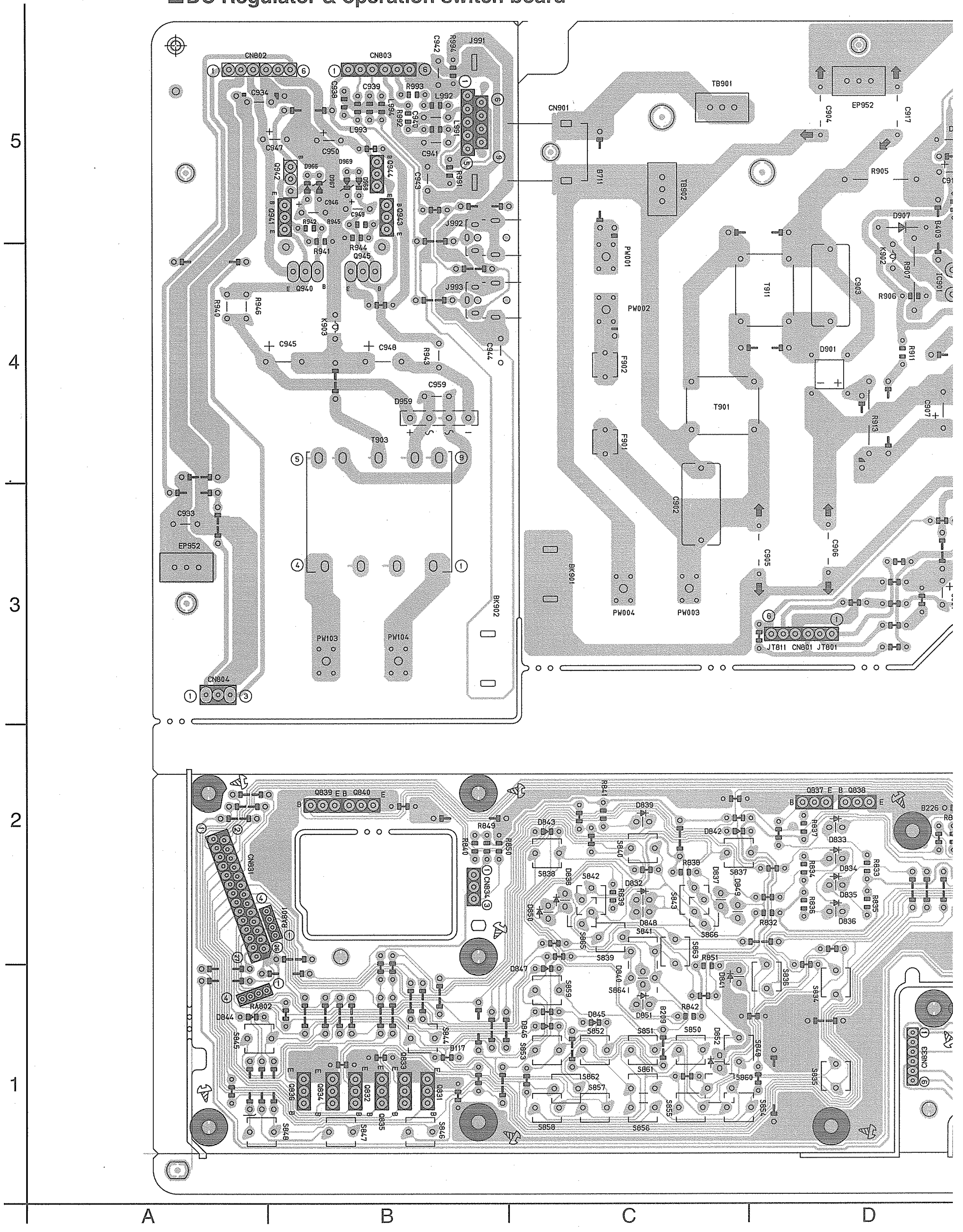
R750
R751
L701
L703
123ボンド

D | E | F | G | H

■DC Regulator & operation switch board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C941
Q942
D966
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D967
D968
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R991
Q941
C946
C949
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R942
R945
R944
R941
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Q940
J992
J993
R940
R946
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C945
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R943
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TB902
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F901
PW004
PW003
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T901
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C903
D901
C904
C917
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B403
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R907
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R911
C907
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C905
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Q840
Q837
Q838
B226
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R840
R850
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CN831
RA801
RA802
R841
D839
D843
D842
R837
D833
D834
D835
D836
R834
R833
R836
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S837
S843
D848
S841
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S865
S839
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R851
D847
S859
D840
S864
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S836
S834
D851
B209
R842
D844
S845
D845
D846
S852
S853
S851
S850
D852
S849
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Q835
Q831
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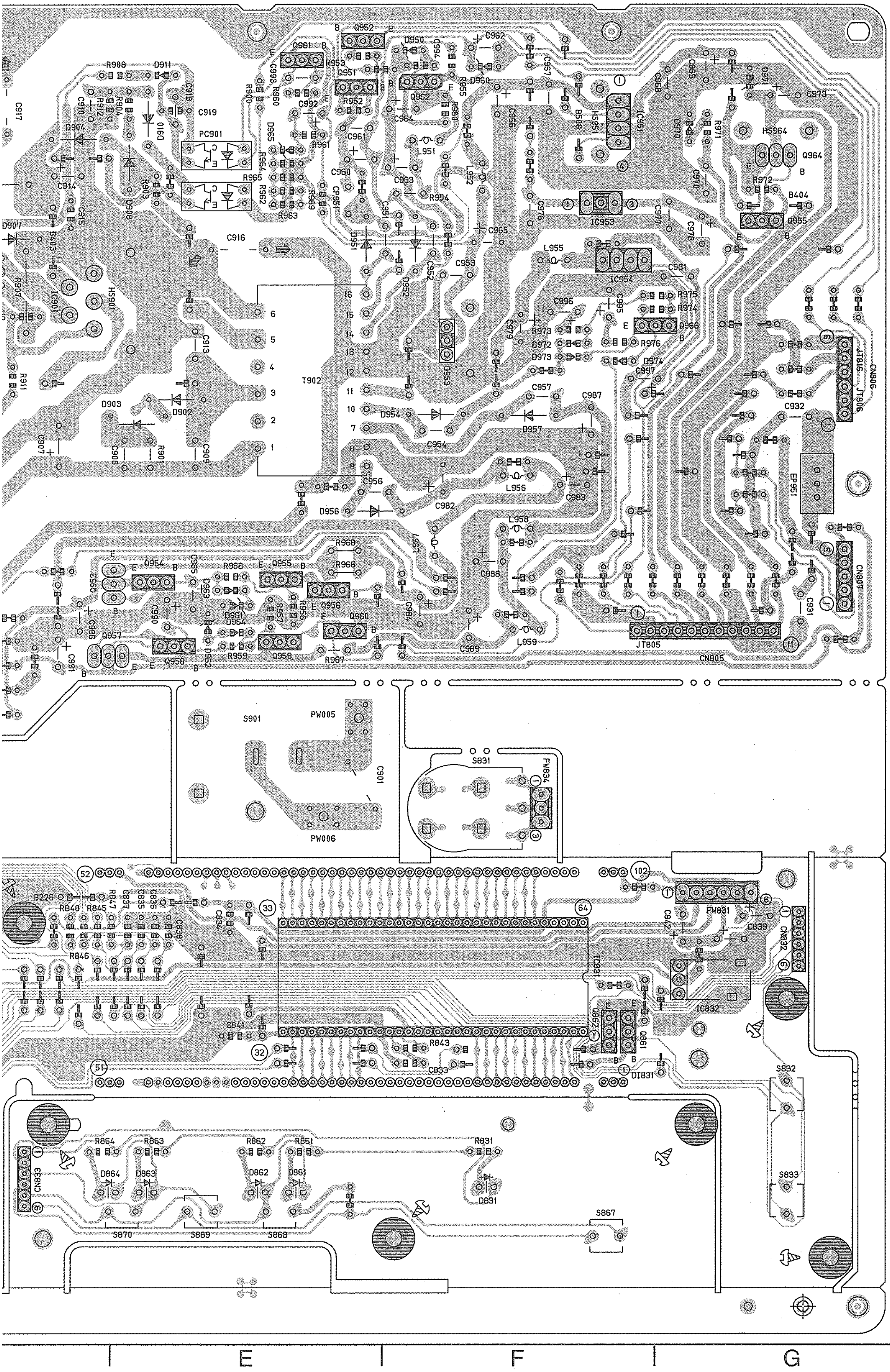
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C973
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D911
C918
C919
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R912
R904
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R952
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R980
C956
B506
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D904
D910
PC901
D965
R961
C961
L951
L952
C960
C963
R954
C965
C976
IC953
C977
C978
R972
B404
Q965
C914
R903
D908
R965
R964
R962
R969
R963
CP951
C951
C970
D907
C915
B403
C916
D951
D952
C952
C953
L955
IC954
C981
R907
IC901
HS901
C996
C995
R975
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Q966
R976
C979
R973
D972
D973
D974
C997
D953
C913
T902
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D903
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C957
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D954
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R901
C909
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EP951
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R956
D964
Q960
C984
C931
C986
C990
Q957
Q958
D962
R959
Q959
R967
C989
L959
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S901
PW005
C901
PW006
S831
FW834
B226
R848
R845
R847
C837
C835
C836
C838
C834
R846
FW831
C842
C839
CN832
IC831
IC832
C841
Q862
Q861
R843
C833
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S832
S833
R864
R863
R862
R861
R831
D864
D863
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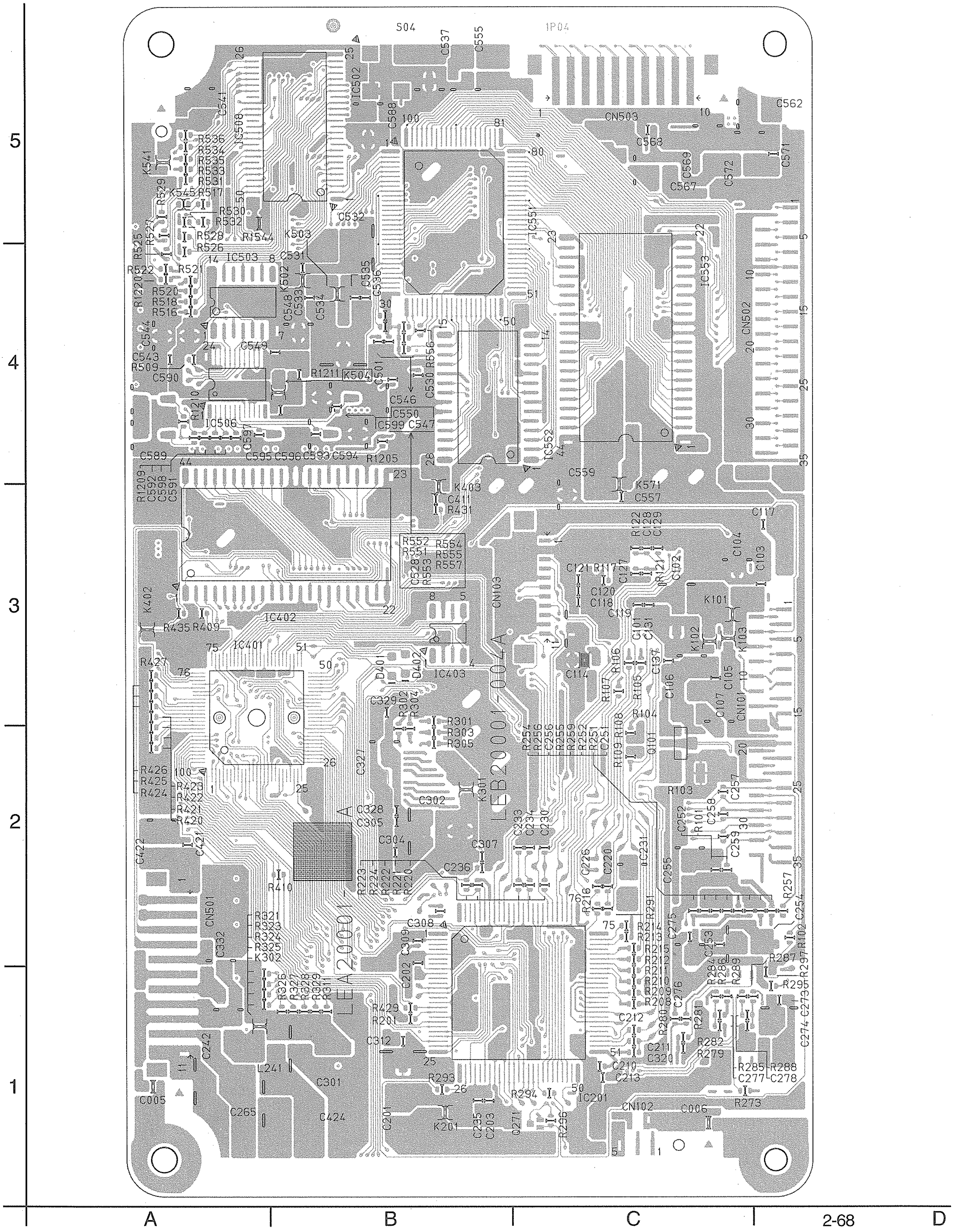
S869
S868
S867
E
F
G

■ **DVD Servo Control Board** (Parts Side)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R535
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R531
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R532
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C532
C588
CN503
C568
C562
C569
C572
C571
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R525
R527
R528
R526
R522
R521
R1220
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R516
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K502
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C308
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R215
R212
R211
R210
R209
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C213
R285
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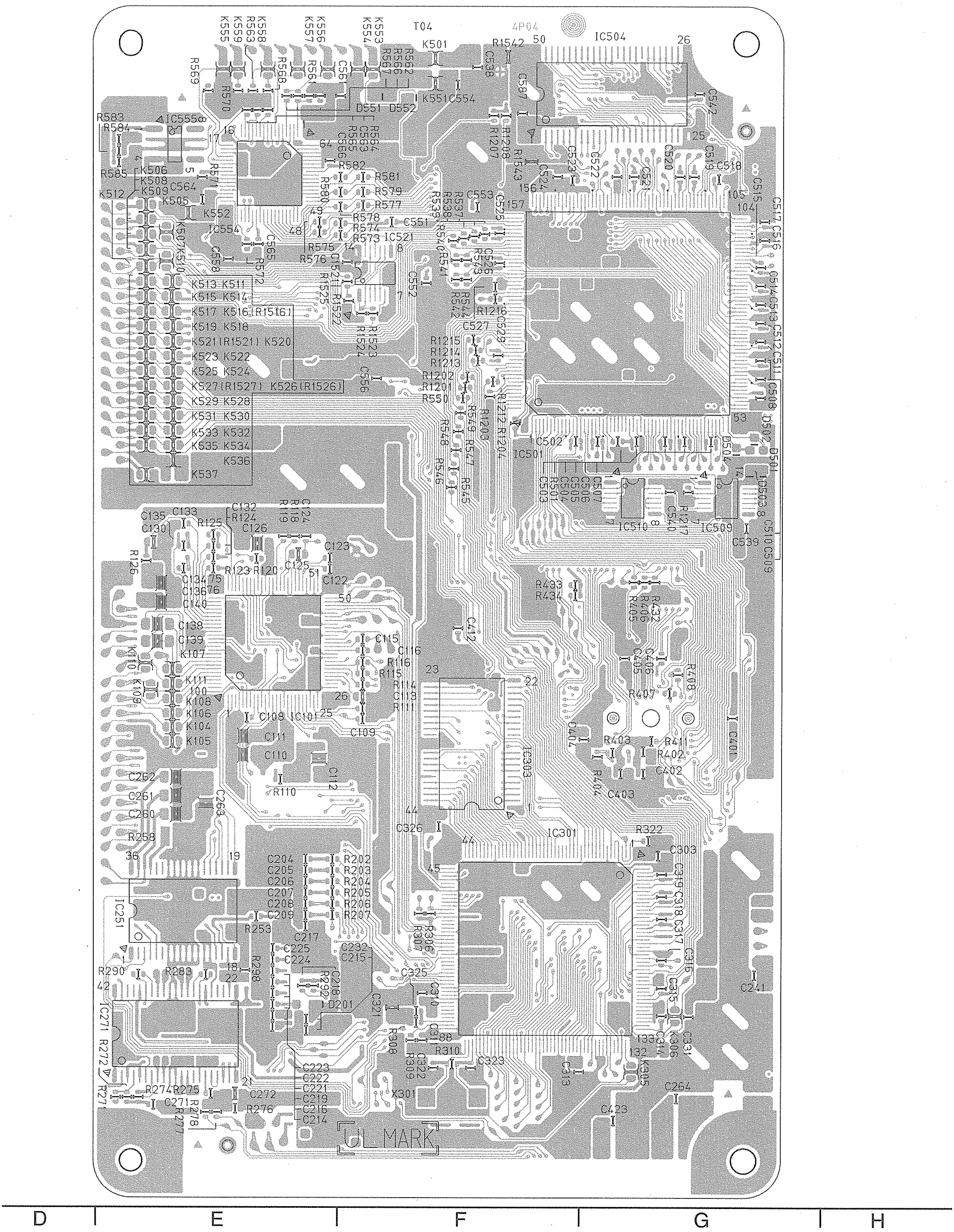
(Solder Side)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IC509
D501
D502
D503
D504
IC101
IC303
IC301
IC251
IC271
D201
X301
UL MARK
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K515 K514
K517 K516 (R1516)
K519 K518
K521 (R1521) K520
K523 K522
K525 K524
K527 (R1527) K526 (R1526)
K529 K528
K531 K530
K533 K532
K535 K534
K536
K537
C204 R202
C205 R203
C206 R204
C207 R205
C208 R206
C209 R207
C223
C222
C221
C219
C216
C214
D
E
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G
H

PARTS LIST

[XV-501BK]
[XV-505GD]

* All printed circuit boards and its assemblies are not available as service parts.

Areas Suffix	
XV-501BK	
B	U.K.
E	Continental Europe
EN	Northern Europe
EE	Russian Federation

Areas Suffix	
XV-505GD	
B	U.K.
E	Continental Europe
EN	Northern Europe

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Electrical Parts List 3-10
Packing Materials and Accessories List 3-20

-MEMO-

■Parts List(General Assembly)

BLOCK NO M1MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	LE10202-014A	FRONT PANEL	1	XV-501BK	
		LE10202-021A	FRONT PANEL	1	XV-505GD	
	2	PQ42376-1-3	APPROVAL MARK	1		
	3	LE10204-001A	SUB PANEL	1	XV-501BK	
		LE10204-005A	SUB PANEL	1	XV-505GD	
	4	LE20444-003A	WINDOW SCREEN	1	XV-501BK	
		LE20444-010A	WINDOW SCREEN	1	XV-505GD	
	5	E409509-001	INDICATOR LENS	1		
	6	LE30715-002A	POWER BUTTON	1	XV-501BK	
		LE30715-007A	POWER BUTTON	1	XV-505GD	
	7	LE20448-001A	PLAY BUTTON	1	XV-501BK	
		LE20448-004A	PUSH BUTTON	1	XV-505GD	
	8	LE30717-001A	PUSH BUTTON	1	XV-501BK	
		LE30717-005A	PUSH BUTTON	1	XV-505GD	
	10	LE20450-001A	PUSH BUTTON	1	XV-501BK	
		LE20450-003A	PUSH BUTTON	1	XV-505GD	
	11	LE20453-001A	PUSH BUTTON	1	XV-501BK	
		LE20453-002A	PUSH BUTTON	1	XV-505GD	
	12	QYSDSF2608Z	SCREW	15		
	13	QUQ110-2713BJ	FLAT WIRE	1		
	14	LE30730-001A	FRONT BRACKET	1		
	17	WJE0003-001A	SOCKET WIRE ASSY	1		
	18	QYSDSG3008M	SCREW	3		
	19	E103252-004	CHASSIS BASE	1		
	20	LE40273-001A	SPACER	1		
	22	E307427-005	FOOT ASSY	4		
	23	QYSBSGG3008E	T.SCREW	6		
	24	QUQ110-3511AM	FLAT WIRE	1		
	25	LE30737-001A	PROTECT SHEET	1		
	26	E73967-005	SPACER	1		
	28	WJE0001-001A	SOCKET WIRE ASSY	1		
	29	QYSBSGG3008E	T.SCREW	1		
	31	--------------	DVD DRIVE MECHA	1		
	32	QUQ110-3513AM	FLAT WIRE	1		
	33	QUQ110-0515AJ	FLAT WIRE	1		
	34	LE20466-001A	MAIN BRACKET	1		
	35	QYSBSG3010E	T.SCREW	4		
	36	QYSBSGY3008E	SPECIAL SCREW	5		
	38	LE20462-003A	REAR PANEL	1	XV-501BK	B E EN
		LE20462-004A	REAR PANEL	1	XV-501BK	EE
		LE20462-030A	REAR PANEL	1	XV-505GD	
⚠	39	QMP3900-200	POWER CORD	1		E EE EN
⚠		QMP5530-0085BS	POWER CORD	1		B
⚠	40	QHS3771-108	CORD STOPPER	1		
⚠	41	QMF51A2-R80-S	FUSE F001	1		E EE EN
⚠		QMF51E2-R80-S	FUSE F001	1		B
	42	E307572-001	FASTENER	1		
	43	QYSBSGY3008M	SPECIAL SCREW	11		
	51	E209102-001/S/	METAL COVER	1	XV-501BK	
		E209102-003/S/	METAL COVER	1	XV-505GD	
	52	E406308-003	SPECIAL SCREW	4	XV-501BK	
		E406308-004	SPECIAL SCREW	4	XV-505GD	

■Parts List(General Assembly)

BLOCK NO M1MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	53	QYSBSG3008E	T.SCREW	2		
	54	LE20446-001A	TRAY FITTING	1	XV-501BK	
		LE20446-005A	TRAY FITTING	1	XV-505GD	
	55	LE40564-001A	DVD MARK	1		
	56	E309394-005	HEADPHONE KNOB	1	XV-501BK	
		E309394-006	HEADPHONE KNOB	1	XV-505GD	
	57	LE30714-001A	SHUTTLE KNOB	1	XV-501BK	
		LE30714-004A	SHUTTLE KNOB	1	XV-505GD	
	66	QYSBST3010Z	TH TAP SCREW	4		
	69	QQR0216-001	NOISE FILTER	2		
	70	LEA10011-003A	SUB P.C.B.	1	XV-501BK	E EE
		LEA10011-003A	SUB P.C.B.	1	XV-505GD	E EN
	71	E3400-431	SPACER	8	XV-501BK	E EE
		E3400-431	SPACER	8	XV-505GD	E EN

Exploded View of General Assembly and Parts List

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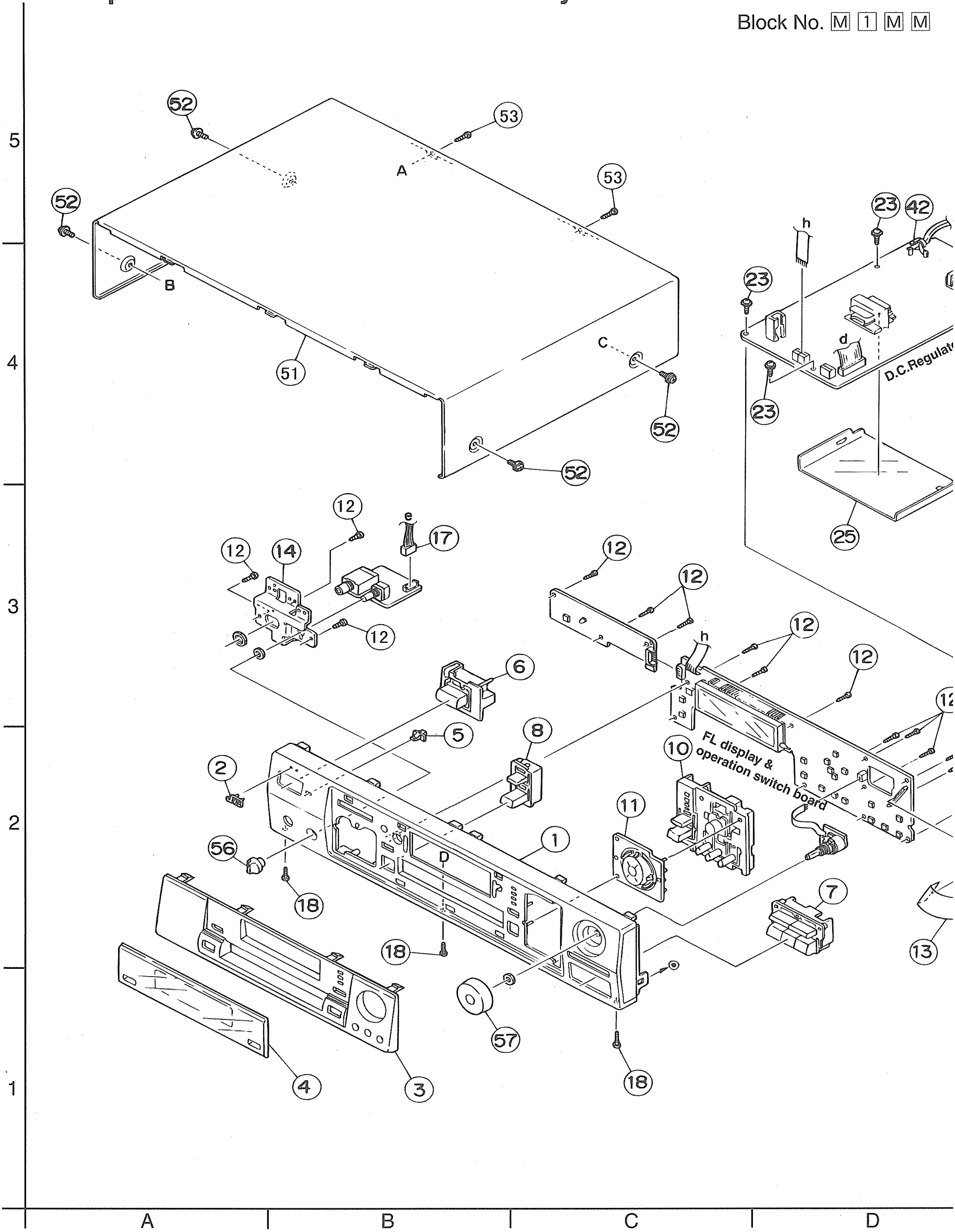
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42
h
23
d
D.C.Regulat
23
25
12
e
17
12
14
12
12
12
12
h
12
12
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FL display & operation switch board
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56
D
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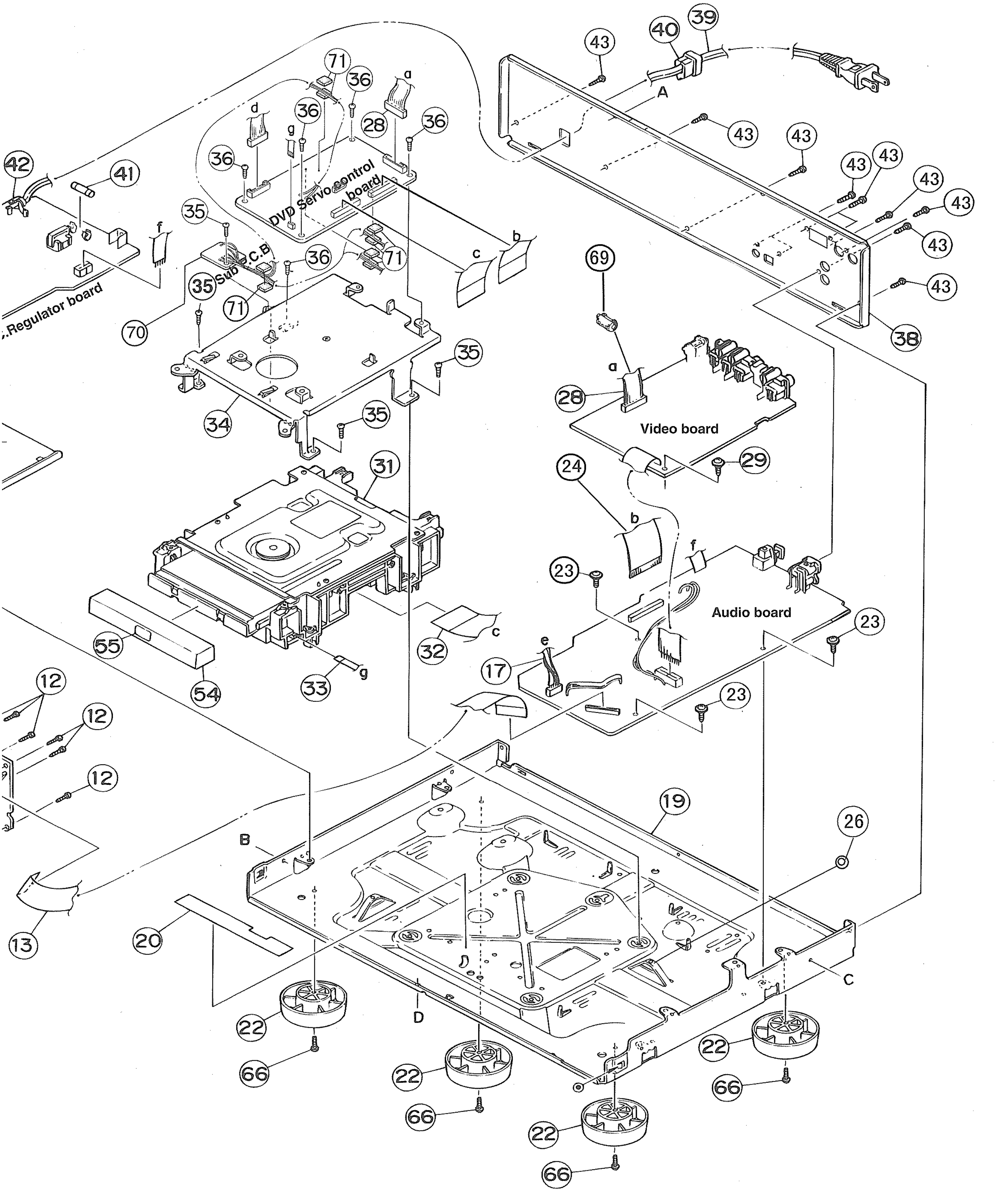
M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DVD Servo control board
f
b
Sub P.C.B
c
Regulator board
a
Video board
b
f
Audio board
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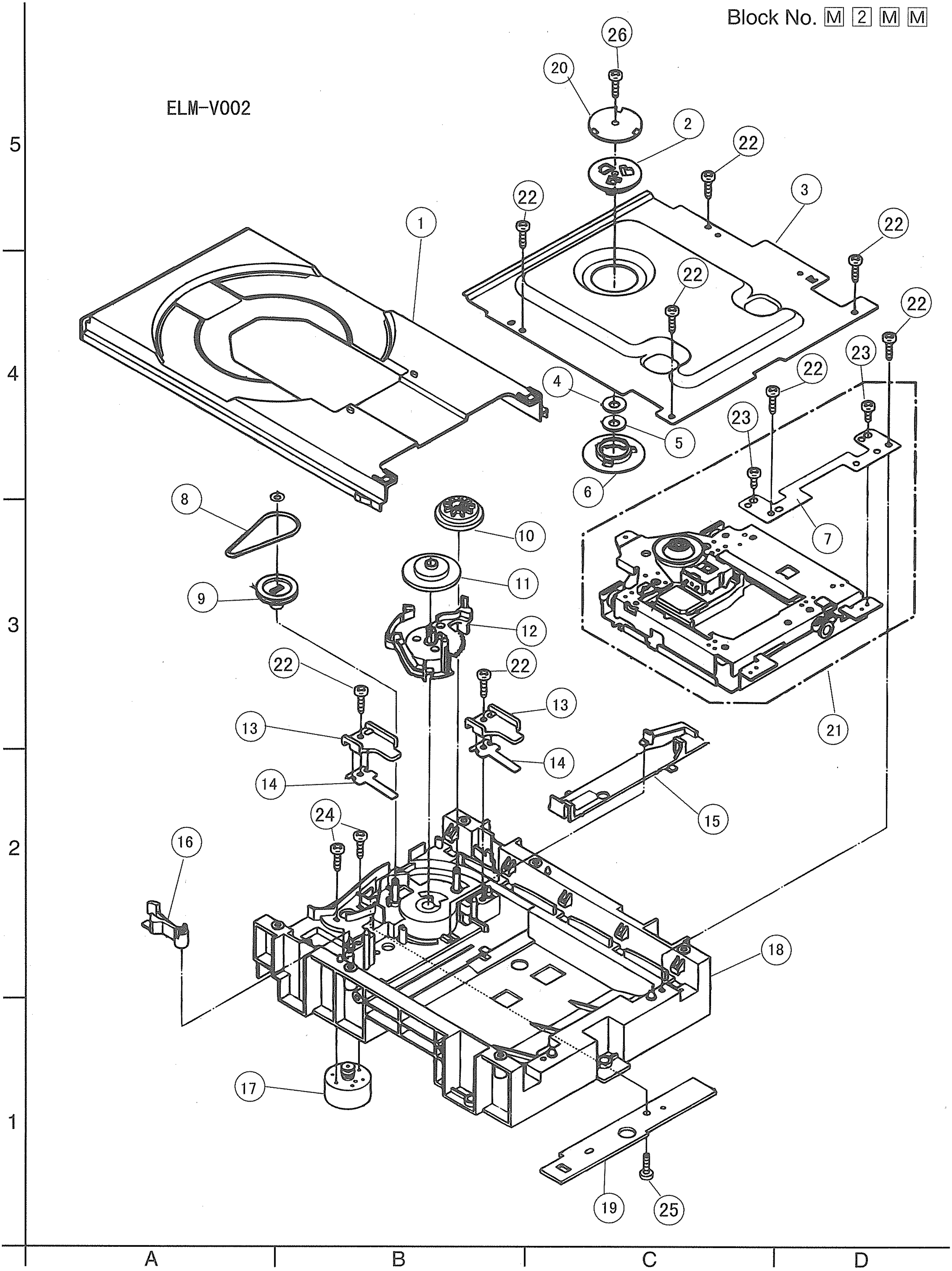
B
D
C

-MEMO-

DVD Mechanism Unit and Parts List

Block No. M 2 M M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■DVD Mechanism

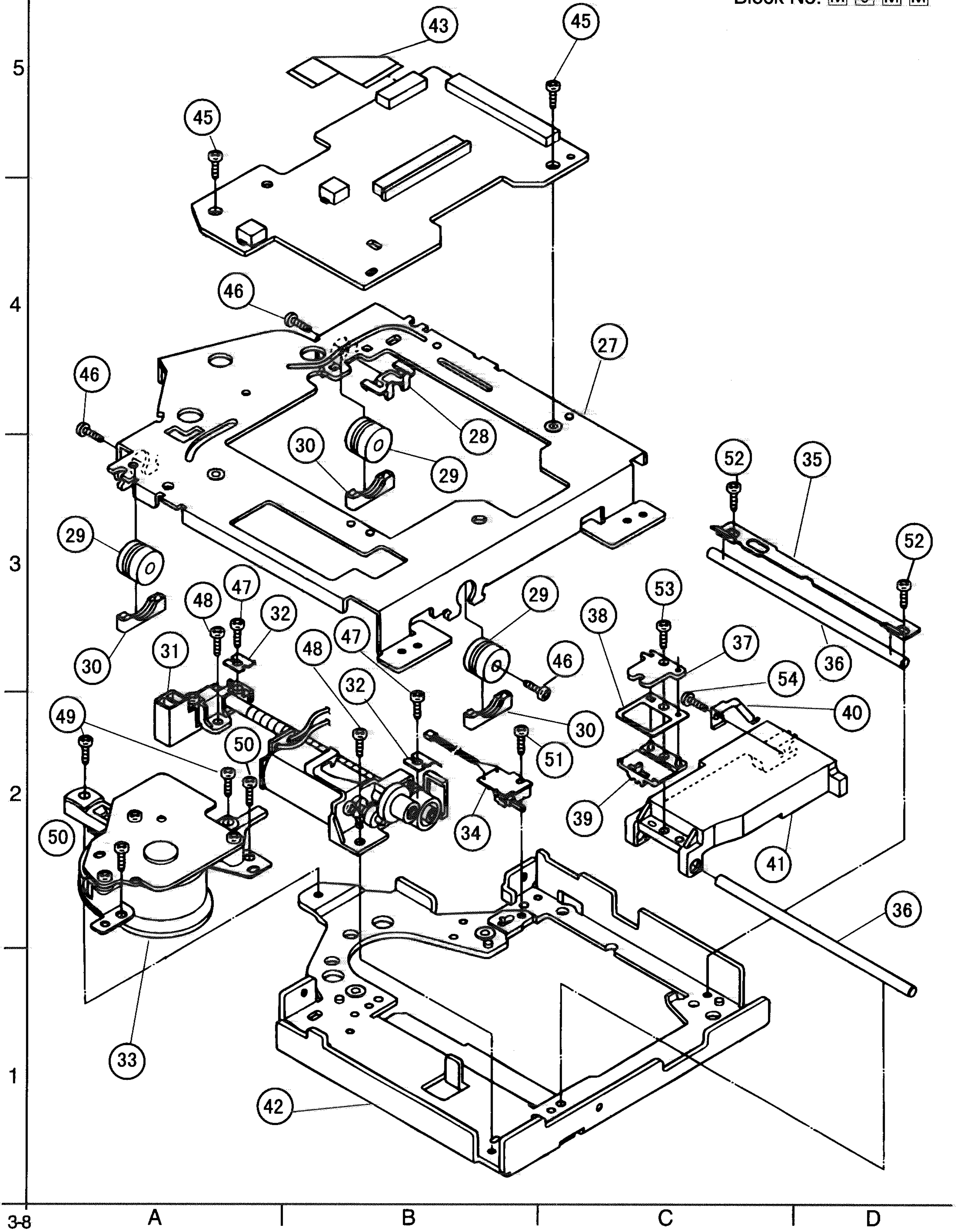
BLOCK NO M2MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	EGMVMD2643	TRAY	1		
	2	EGMVMD2640	CLAMP HOLDER	1		
	3	EGMVMA9534	CLAMPER BASE	1		
	4	EGMVMA9535	YOKE	1		
	5	EGMVSQ1002	MAGNET	1		
	6	EGMVMD2639	CLAMPER	1		
	7	EGMVMC1264	LEAF SPRING	1		
	8	EGMVDV0373	BELT	1		
	9	EGMVDG1229	DRIVE PULLEY	1		
	10	EGMVDG1231	TRAY GEAR	1		
	11	EGMVDG1227	GEAR	1		
	12	EGMVDK0150	ROTARY CAM	1		
	13	EGMVMA9572	MECHA BRACKET	2		
	14	EGMVMC1267	MECHA BRACKET	2		
	15	EGMVMD2641	SLIDER	1		
	16	EGMVMD2642	SWITCH LEVER	1		
	17	EGMVEM0609	LOADING MOTOR	1		
	18	EGMVMD2683	LOADING BASE	1		
	19	EGMVEK8001	PRINTED BOARD	1		
	20	EGMVMA9695	CLAMPER WEIGHT	1		
	21	----------	TRAVERSE UNIT	1	SEE BLOCK NO M3MM	
	22	EGMXTV26-8G	SCREW	7		
	23	EGMXYC26-BF5FZN	SCREW	2		
	24	EGMXQNQC17-3	SCREW	2		
	25	EGMXTV26-8G	SCREW	1		
	26	EGMXTS26-6J	SCREW	1		

DVD Mechanism Unit and Parts List

ELM-V002

Block No. M 3 M M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■DVD Mechanism

BLOCK NO M3MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	27	EGMVXA5786	CHASSIS FRAME	1		
	28	EGMVMD2682	CLAMPER	1		
	29	EGMVMG1001	DAMPER	3		
	30	EGMVMD2675	DAMPER HOLDER	3		
	31	EGMVXQ0588	FEED MOTOR ASS'Y	1		
	32	EGMVMC1262	SHAFT HOLDER	2		
	33	EGMVXA6065	SPINDEL MOTOR ASS'Y	1		
	34	EGMVEK8061	SWITCH ASS'Y	1		
	35	EGMVMC1260	SHAFT HOLDER	1		
	36	EGMVMS6098	GUIDE SHAFT	2		
	37	EGMVMA9532	STOPPER PLATE	1		
	38	EGMVMC1263	SPRING STOPPER	1		
	39	EGMVMD2637	RACK PLATE	1		
	40	EGMVMC1265	LEAF SPRING	1		
	41	EGMVED0378	OPTICAL PICK-UP	1		
	42	EGMVMK0433	CHASSIS BASE	1		
	43	EGMVWJ1116	FLAT WIRE	1		
	45	EGMXTB26-5F	SCREW	2		
	46	EGMVHD1032	SCREW	3		
	47	EGMXYC2-JF10	SCREW	2		
	48	EGMXYN2-J4	SCREW	2		
	49	EGMXVE26B10FP	SCREW	2		
	50	EGMXYC2-JF5	SCREW	2		
	51	EGMXYN2-J8	SCREW	1		
	52	EGMXSN2-3	SCREW	2		
	53	EGMXQN17-C5	SCREW	1		
	54	EGMVHD1057	SCREW	1		

■DVD Servo Control P.C.B.

BLOCK NO 01

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC101	AN8825NFHQ	I.C(M)	
	IC201	MN67702VRZC3	I.C(M)	
	IC251	M56755AFP-X	I.C(M)	
	IC271	M56759BFP-X	I.C(M)	
	IC301	MN103005AN2G	I.C(M)	
	IC303	M54V16258B45TSK	I.C(M)	
	IC401	MN102LP25GCH	I.C(M)	
	IC402	M27C1602CZ	I.C(M)	
	IC403	AK93C65AF-X	I.C(M)	
	IC501	ZIVA3-PA1	I.C(M)	
	IC502	NAX0265-001X	CRYSTAL	
	IC504	D4516161AG5-A10	I.C(M)	
	IC508	D4516161AG5-A10	I.C(M)	
	IC509	TC74VHC74FT-X	I.C(M)	
	IC510	TC74VHC00FT-X	I.C(M)	
	IC521	TC74VHC00FT-X	I.C(M)	
	IC551	JCE8011	I.C(M)	
	IC552	UPD42280GU-30-X	I.C(M)	
	IC553	JCE8041-X	I.C(DIGI-MOS)	
	IC554	MC44724AVFU	I.C(M)	
	IC555	MC33269D-X	I.C(M)	
		DIODES		
	D201	1SS355-X	SI.DIODE	
	D401	1SS355-X	SI.DIODE	
	D402	1SS355-X	SI.DIODE	
	D551	1SS355-X	SI.DIODE	
	D552	1SS355-X	SI.DIODE	
		TRANSIS		
	Q101	2SB1424/QR/-X	TRANSISTOR	
	Q271	DTC144EE-X	DIGITAL TRANSISTOR	
		CAPACITOR		
	C005	NCB21CK-104X	0.1MF 16V CER.CAP.	
	C006	NCB21CK-104X	0.1MF 16V CER.CAP.	
	C007	NCB21CK-104X	0.1MF 16V CER.CAP.	
	C008	NCB21CK-104X	0.1MF 16V CER.CAP.	
	C101	NCB31CK-104X	0.1MF 16V C CAP.	
	C102	NEX40JM-336X	33MF 6.3V AL E.CAP.	
	C103	NCB31CK-104X	0.1MF 16V C CAP.	
	C104	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C105	NCB31CK-104X	0.1MF 16V C CAP.	
	C106	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C107	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C108	NCS31HJ-560X	56PF 50V C CAP.	
	C110	NCB11CK-105X	1MF 16V C CAP.	
	C111	NCB11CK-105X	1MF 16V C CAP.	
	C112	NCB11CK-105X	1MF 16V C CAP.	
	C113	NCB21CK-184X	0.18MF 16V CER.CAP.	
	C114	NCB11CK-105X	1MF 16V C CAP.	
	C115	NCB31HK-102X	1000PF 50V C CAP.	
	C116	NCB31HK-102X	1000PF 50V C CAP.	
	C117	NCB31CK-104X	0.1MF 16V C CAP.	
	C118	NCB31CK-104X	0.1MF 16V C CAP.	
	C119	NEA71AM-336X	33MF 10V AL E.CAP.	
	C120	NCB31CK-104X	0.1MF 16V C CAP.	
	C121	NCB31CK-104X	0.1MF 16V C CAP.	
	C122	NCB31HK-682X	6800PF 50V C CAP.	
	C123	NCB31CK-104X	0.1MF 16V C CAP.	
	C124	NCS31HJ-181X	180PF 50V C CAP.	
	C125	NCB21CK-224X	0.22MF 16V C CAP.	
	C126	NCB11CK-105X	1MF 16V C CAP.	
	C127	NCB31HK-221X	220PF 50V C CAP.	
	C128	NCB31HK-221X	220PF 50V C CAP.	
	C129	NCB31CK-104X	0.1MF 16V C CAP.	
	C130	NCB21CK-224X	0.22MF 16V C CAP.	
	C131	NCB31CK-104X	0.1MF 16V C CAP.	
	C132	NCB31CK-104X	0.1MF 16V C CAP.	
	C133	NCB31CK-104X	0.1MF 16V C CAP.	
	C134	NCB31CK-104X	0.1MF 16V C CAP.	
	C135	NCB31CK-104X	0.1MF 16V C CAP.	
	C136	NCB11CK-105X	1MF 16V C CAP.	
	C137	NCB31CK-104X	0.1MF 16V C CAP.	
	C138	NCB11CK-684X	0.68MF 16V C.CAPA.	
	C139	NCB11CK-684X	0.68MF 16V C.CAPA.	
	C140	NCB11CK-105X	1MF 16V C CAP.	
	C201	NEA70JM-107X	100MF 6.3V E CAP..	
	C202	NCB31CK-104X	0.1MF 16V C CAP.	
	C203	NCB31CK-104X	0.1MF 16V C CAP.	
	C204	NCB31CK-104X	0.1MF 16V C CAP.	
	C205	NCB31CK-104X	0.1MF 16V C CAP.	
	C206	NCB31CK-104X	0.1MF 16V C CAP.	
	C207	NCB31CK-104X	0.1MF 16V C CAP.	
	C208	NCB31CK-104X	0.1MF 16V C CAP.	
	C209	NCB31CK-103X	0.01MF 16V C.CAPA.	
	C210	NCB31CK-104X	0.1MF 16V C CAP.	
	C211	NCB31HK-102X	1000PF 50V C CAP.	
	C212	NCB31HK-102X	1000PF 50V C CAP.	
	C213	NCB31CK-104X	0.1MF 16V C CAP.	
	C214	NCB31CK-104X	0.1MF 16V C CAP.	
	C215	NCB31CK-104X	0.1MF 16V C CAP.	
	C216	NCB31CK-104X	0.1MF 16V C CAP.	
	C217	NCB31CK-104X	0.1MF 16V C CAP.	
	C218	NCS31HJ-100X	10PF 50V C CAP.	
	C219	NCB31HK-182X	1800PF 50V C.CAP.	
	C220	NCB31HK-392X	3900PF 50V C CAP.	
	C221	NCB31HK-562X	5600PF 50V C CAP.	
	C222	NCB31HK-222X	2200PF 50V C CAP.	
	C223	NCB31HK-562X	5600PF 50V C CAP.	
	C224	NCB31HK-122X	1200PF 50V C.CAPA.	
	C225	NCB31HK-562X	5600PF 50V C CAP.	
	C226	NCB31HK-562X	5600PF 50V C CAP.	
	C230	NCB31HK-562X	5600PF 50V C CAP.	
	C231	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C232	NCB31CK-104X	0.1MF 16V C CAP.	
	C233	NCB31HK-222X	2200PF 50V C CAP.	
	C234	NCB31CK-103X	0.01MF 16V C.CAPA.	
	C235	NCB31CK-104X	0.1MF 16V C CAP.	
	C236	NCB31CK-104X	0.1MF 16V C CAP.	
	C241	NCB31CK-104X	0.1MF 16V C CAP.	
	C242	NEX20JM-156X	15MF 6.3V E.CAP.	
	C251	NCB31CK-104X	0.1MF 16V C CAP.	
	C252	NCB31CK-104X	0.1MF 16V C CAP.	
	C253	NCB31CK-104X	0.1MF 16V C CAP.	
	C254	NEA71CM-226X	22MF 16V AL E.CAP.	
	C255	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C256	NCB31CK-104X	0.1MF 16V C CAP.	
	C257	NCB31CK-104X	0.1MF 16V C CAP.	
	C258	NCB31CK-104X	0.1MF 16V C CAP.	
	C259	NCB31CK-104X	0.1MF 16V C CAP.	
	C260	NCB11CK-105X	1MF 16V C CAP.	
	C261	NCB11CK-105X	1MF 16V C CAP.	
	C262	NCB11CK-105X	1MF 16V C CAP.	
	C263	NCB11CK-105X	1MF 16V C CAP.	
	C264	NCB31CK-104X	0.1MF 16V C CAP.	
	C265	NEA71CM-476X	47MF 16V AL E.CAP.	
	C271	NCB31HK-122X	1200PF 50V C.CAPA.	
	C272	NCB21CK-274X	0.27MF 16V C.CAPA.	
	C273	NCB31CK-104X	0.1MF 16V C CAP.	
	C274	NEA71CM-226X	22MF 16V AL E.CAP.	
	C275	NCB31CK-104X	0.1MF 16V C CAP.	
	C276	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C277	NCB31HK-122X	1200PF 50V C.CAPA.	
	C278	NCB31HK-122X	1200PF 50V C.CAPA.	
	C301	NEA70JM-107X	100MF 6.3V E CAP..	

■DVD Servo Control P.C.B.

BLOCK NO 01

⚠	Item	Parts Number	Description	Area
	C302	NEA70JM-107X	100MF 6.3V E CAP..	
	C303	NCB31CK-104X	0.1MF 16V C CAP.	
	C304	NCB31CK-104X	0.1MF 16V C CAP.	
	C305	NCB31CK-104X	0.1MF 16V C CAP.	
	C307	NCB31CK-104X	0.1MF 16V C CAP.	
	C308	NCB31CK-104X	0.1MF 16V C CAP.	
	C309	NCB31CK-104X	0.1MF 16V C CAP.	
	C310	NCB31CK-104X	0.1MF 16V C CAP.	
	C311	NCB31CK-104X	0.1MF 16V C CAP.	
	C312	NCB31CK-104X	0.1MF 16V C CAP.	
	C313	NCB31CK-104X	0.1MF 16V C CAP.	
	C314	NCB31CK-104X	0.1MF 16V C CAP.	
	C315	NCB31CK-104X	0.1MF 16V C CAP.	
	C316	NCB31CK-104X	0.1MF 16V C CAP.	
	C317	NCB31CK-104X	0.1MF 16V C CAP.	
	C318	NCB31CK-104X	0.1MF 16V C CAP.	
	C319	NCB31CK-104X	0.1MF 16V C CAP.	
	C320	NCB31HK-102X	1000PF 50V C CAP.	
	C321	NCB21AK-105X	1MF 10V C.CAPA. C	
	C322	NCS31HJ-8R0X	8PF 50V C CAP.	
	C323	NCS31HJ-8R0X	8PF 50V C CAP.	
	C325	NCB31CK-103X	0.01MF 16V C.CAPA.	
	C326	NCB31CK-104X	0.1MF 16V C CAP.	
	C327	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C328	NCB31CK-104X	0.1MF 16V C CAP.	
	C329	NCB31CK-104X	0.1MF 16V C CAP.	
	C331	NCB31CK-104X	0.1MF 16V C CAP.	
	C332	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C401	NCB31CK-104X	0.1MF 16V C CAP.	
	C402	NCB31CK-104X	0.1MF 16V C CAP.	
	C403	NCB31CK-104X	0.1MF 16V C CAP.	
	C404	NCB31CK-104X	0.1MF 16V C CAP.	
	C406	NCB31CK-104X	0.1MF 16V C CAP.	
	C411	NCB31CK-104X	0.1MF 16V C CAP.	
	C412	NCB31CK-104X	0.1MF 16V C CAP.	
	C421	NCB31CK-104X	0.1MF 16V C CAP.	
	C422	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C423	NCB31CK-104X	0.1MF 16V C CAP.	
	C424	NEA70JM-107X	100MF 6.3V E CAP..	
	C501	NCB31CK-104X	0.1MF 16V C CAP.	
	C502	NCB31CK-104X	0.1MF 16V C CAP.	
	C503	NCB31CK-104X	0.1MF 16V C CAP.	
	C504	NCB31CK-104X	0.1MF 16V C CAP.	
	C505	NCB31CK-104X	0.1MF 16V C CAP.	
	C506	NCB31CK-104X	0.1MF 16V C CAP.	
	C507	NCB31CK-104X	0.1MF 16V C CAP.	
	C508	NCB31CK-104X	0.1MF 16V C CAP.	
	C509	NCB31CK-104X	0.1MF 16V C CAP.	
	C510	NCB31CK-104X	0.1MF 16V C CAP.	
	C511	NCB31CK-104X	0.1MF 16V C CAP.	
	C512	NCB31CK-104X	0.1MF 16V C CAP.	
	C513	NCB31CK-104X	0.1MF 16V C CAP.	
	C514	NCB31CK-104X	0.1MF 16V C CAP.	
	C515	NCB31CK-104X	0.1MF 16V C CAP.	
	C516	NCB31CK-104X	0.1MF 16V C CAP.	
	C517	NCB31CK-104X	0.1MF 16V C CAP.	
	C518	NCB31CK-104X	0.1MF 16V C CAP.	
	C519	NCB31CK-104X	0.1MF 16V C CAP.	
	C520	NCB31CK-104X	0.1MF 16V C CAP.	
	C521	NCB31CK-104X	0.1MF 16V C CAP.	
	C522	NCB31CK-104X	0.1MF 16V C CAP.	
	C523	NCB31CK-104X	0.1MF 16V C CAP.	
	C524	NCB31CK-104X	0.1MF 16V C CAP.	
	C525	NCB31CK-104X	0.1MF 16V C CAP.	
	C526	NCB31CK-104X	0.1MF 16V C CAP.	
	C527	NCB31CK-104X	0.1MF 16V C CAP.	
	C528	NCB31CK-104X	0.1MF 16V C CAP.	

⚠	Item	Parts Number	Description	Area
	C529	NCB31CK-104X	0.1MF 16V C CAP.	
	C530	NCB31CK-104X	0.1MF 16V C CAP.	
	C531	NCB31CK-104X	0.1MF 16V C CAP.	
	C532	NEA70JM-107X	100MF 6.3V E CAP..	
	C533	NCB31CK-104X	0.1MF 16V C CAP.	
	C534	NEA70JM-107X	100MF 6.3V E CAP..	
	C535	NCB31CK-104X	0.1MF 16V C CAP.	
	C536	NCB31CK-103X	0.01MF 16V C.CAPA.	
	C537	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C538	NCB31CK-104X	0.1MF 16V C CAP.	
	C539	NCB31CK-104X	0.1MF 16V C CAP.	
	C540	NCB31CK-104X	0.1MF 16V C CAP.	
	C541	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C542	NCB31CK-104X	0.1MF 16V C CAP.	
	C551	NCB31CK-104X	0.1MF 16V C CAP.	
	C552	NCB31CK-104X	0.1MF 16V C CAP.	
	C553	NCB31CK-104X	0.1MF 16V C CAP.	
	C554	NCB31CK-104X	0.1MF 16V C CAP.	
	C555	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C556	NCB31CK-104X	0.1MF 16V C CAP.	
	C557	NCB31CK-104X	0.1MF 16V C CAP.	
	C558	NCB31CK-104X	0.1MF 16V C CAP.	
	C559	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C561	NCB31CK-104X	0.1MF 16V C CAP.	
	C562	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C563	NCB31CK-104X	0.1MF 16V C CAP.	
	C564	NCB31CK-104X	0.1MF 16V C CAP.	
	C565	NCB31CK-104X	0.1MF 16V C CAP.	
	C566	NCB31CK-104X	0.1MF 16V C CAP.	
	C567	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C568	NCB31CK-104X	0.1MF 16V C CAP.	
	C569	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C571	NCB31CK-104X	0.1MF 16V C CAP.	
	C572	NEX20JM-156X	15MF 6.3V E.CAP.	
	C587	NCB31CK-104X	0.1MF 16V C CAP.	
	C588	NEA70JM-226X	22MF 6.3V AL E.CAP.	
	C1521	NCB31CK-104X	0.1MF 16V C CAP.	
		RESISTOR		
	R101	NRSA63J-271X	RES. C.M	
	R102	NRSA63J-102X	RES. C.M	
	R103	NRS125J-100X	RES. C.M	
	R104	NRS125J-2R2X	M.G.RESIS	
	R105	NRSA63J-123X	MG RES.	
	R106	NRSA63J-223X	RES. C.M	
	R107	NRSA63J-433X	METAL GLA	
	R110	NRSA63J-0R0X	RES. C.M	
	R111	NRSA63J-682X	RES. C.M	
	R114	NRSA63J-223X	RES. C.M	
	R115	NRSA63J-752X	MG RES.	
	R116	NRSA63J-333X	RES.I.M	
	R117	NRSA63J-103X	RES. C.M	
	R118	NRSA63J-223X	RES. C.M	
	R119	NRSA63J-332X	RES. C.M	
	R120	NRSA63J-682X	RES. C.M	
	R121	NRSA63J-474X	RES. C.M	
	R122	NRSA63J-474X	RES. C.M	
	R123	NRSA63J-223X	RES. C.M	
	R124	NRSA63J-223X	RES. C.M	
	R125	NRSA63J-333X	RES.I.M	
	R126	NRSA63J-514X	MG RES.	
	R201	NRSA63J-472X	RES. C.M	
	R202	NRSA63J-273X	MG RES.	
	R203	NRSA63J-822X	RES. C.M	
	R204	NRSA63J-273X	MG RES.	
	R205	NRSA63J-183X	MG RES.	
	R206	NRSA63J-333X	RES.I.M	
	R207	NRSA63J-273X	MG RES.	

■DVD Servo Control P.C.B.

BLOCK NO 01

⚠	Item	Parts Number	Description	Area
	R208	NRSA63J-562X	RES.I.M	
	R209	NRSA63J-562X	RES.I.M	
	R210	NRSA63J-562X	RES.I.M	
	R211	NRSA63J-562X	RES.I.M	
	R212	NRSA63J-562X	RES.I.M	
	R213	NRSA63J-562X	RES.I.M	
	R214	NRSA63J-562X	RES.I.M	
	R215	NRSA63J-562X	RES.I.M	
	R216	NRSA63J-562X	RES.I.M	
	R220	NRSA63J-512X	MG RES.	
	R221	NRSA63J-101X	METAL GLA	
	R222	NRSA63J-202X	MG RES.	
	R223	NRSA63J-103X	RES. C.M	
	R224	NRSA63J-223X	RES. C.M	
	R251	NRSA63J-472X	RES. C.M	
	R252	NRVA63D-223NY	METAL GLA	
	R254	NRVA63D-103NY	CONST.MET	
	R255	NRVA63D-223NY	METAL GLA	
	R256	NRVA63D-103NY	CONST.MET	
	R257	NRSA63J-151X	MG RES.	
	R258	NRS125J-R47X	METAL GLA	
	R259	NRSA63J-0R0X	RES. C.M	
	R271	NRSA63J-103X	RES. C.M	
	R272	NRSA63J-682X	RES. C.M	
	R273	NRSA63J-0R0X	RES. C.M	
	R274	NRSA63J-682X	RES. C.M	
	R275	NRSA63J-103X	RES. C.M	
	R276	NRSA63J-105X	MG RES.	
	R277	NRSA63J-822X	RES. C.M	
	R278	NRSA63J-123X	MG RES.	
	R279	NRVA63D-123X	METAL GLA	
	R280	NRVA63D-123X	METAL GLA	
	R281	NRVA63D-473X	CONST.MET	
	R282	NRVA63D-473X	CONST.MET	
	R283	NRSA63J-393X	MG RES.	
	R284	NRSA63J-682X	RES. C.M	
	R285	NRSA63J-682X	RES. C.M	
	R286	NRSA63J-0R0X	RES. C.M	
	R287	NRSA63J-682X	RES. C.M	
	R288	NRSA63J-682X	RES. C.M	
	R289	NRSA63J-0R0X	RES. C.M	
	R290	NRSA63J-203X	MG RES.	
	R291	NRSA63J-0R0X	RES. C.M	
	R292	NRSA63J-0R0X	RES. C.M	
	R293	NRSA63J-0R0X	RES. C.M	
	R294	NRSA63J-0R0X	RES. C.M	
	R295	NRSA63J-472X	RES. C.M	
	R297	NRSA63J-0R0X	RES. C.M	
	R301	NRSA63J-330X	MG RES.	
	R302	NRSA63J-330X	MG RES.	
	R303	NRSA63J-330X	MG RES.	
	R304	NRSA63J-330X	MG RES.	
	R305	NRSA63J-330X	MG RES.	
	R306	NRSA63J-471X	RES. C.M	
	R307	NRSA63J-471X	RES. C.M	
	R308	NRSA63J-102X	RES. C.M	
	R309	NRSA63J-473X	RES. C.M	
	R310	NRSA63J-105X	MG RES.	
	R311	NRSA63J-471X	RES. C.M	
	R321	NRSA63J-473X	RES. C.M	
	R322	NRSA63J-473X	RES. C.M	
	R323	NRSA63J-473X	RES. C.M	
	R324	NRSA63J-473X	RES. C.M	
	R325	NRSA63J-473X	RES. C.M	
	R326	NRSA63J-473X	RES. C.M	
	R327	NRSA63J-473X	RES. C.M	
	R328	NRSA63J-473X	RES. C.M	

⚠	Item	Parts Number	Description	Area
	R329	NRSA63J-473X	RES. C.M	
	R402	NRSA63J-472X	RES. C.M	
	R403	NRSA63J-472X	RES. C.M	
	R407	NRSA63J-472X	RES. C.M	
	R408	NRSA63J-472X	RES. C.M	
	R409	NRSA63J-472X	RES. C.M	
	R410	NRSA63J-0R0X	RES. C.M	
	R411	NRSA63J-472X	RES. C.M	
	R424	NRSA63J-0R0X	RES. C.M	
	R425	NRSA63J-0R0X	RES. C.M	
	R427	NRSA63J-0R0X	RES. C.M	EE
	R431	NRSA63J-472X	RES. C.M	
	R432	NRSA63J-472X	RES. C.M	
	R433	NRSA63J-472X	RES. C.M	
	R434	NRSA63J-472X	RES. C.M	
	R435	NRSA63J-472X	RES. C.M	
	R501	NRSA63J-103X	RES. C.M	
	R509	NRSA63J-0R0X	RES. C.M	
	R516	NRSA63J-330X	MG RES.	
	R517	NRSA63J-330X	MG RES.	
	R518	NRSA63J-330X	MG RES.	
	R520	NRSA63J-330X	MG RES.	
	R521	NRSA63J-330X	MG RES.	
	R522	NRSA63J-330X	MG RES.	
	R525	NRSA63J-330X	MG RES.	
	R526	NRSA63J-330X	MG RES.	
	R527	NRSA63J-330X	MG RES.	
	R528	NRSA63J-330X	MG RES.	
	R529	NRSA63J-330X	MG RES.	
	R530	NRSA63J-330X	MG RES.	
	R531	NRSA63J-330X	MG RES.	
	R532	NRSA63J-330X	MG RES.	
	R533	NRSA63J-330X	MG RES.	
	R534	NRSA63J-330X	MG RES.	
	R535	NRSA63J-330X	MG RES.	
	R536	NRSA63J-330X	MG RES.	
	R537	NRSA63J-181X	RES.I.M	
	R538	NRSA63J-181X	RES.I.M	
	R539	NRSA63J-181X	RES.I.M	
	R540	NRSA63J-181X	RES.I.M	
	R541	NRSA63J-181X	RES.I.M	
	R542	NRSA63J-181X	RES.I.M	
	R543	NRSA63J-181X	RES.I.M	
	R544	NRSA63J-181X	RES.I.M	
	R554	NRSA63J-0R0X	RES. C.M	
	R555	NRSA63J-0R0X	RES. C.M	
	R557	NRSA63J-0R0X	RES. C.M	
	R561	NRVA63D-221X	METAL GLA	
	R562	NRVA63D-221X	METAL GLA	
	R563	NRVA63D-271X	METAL GLA	
	R564	NRVA63D-152X	CONST.MET	
	R565	NRVA63D-332X	CONST.MET	
	R567	NRSA63J-0R0X	RES. C.M	
	R568	NRVA63D-221X	METAL GLA	
	R569	NRVA63D-221X	METAL GLA	
	R570	NRVA63D-221X	METAL GLA	
	R571	NRSA63J-100X	MG RES.	
	R572	NRSA63J-181X	RES.I.M	
	R573	NRSA63J-181X	RES.I.M	
	R574	NRSA63J-181X	RES.I.M	
	R575	NRSA63J-181X	RES.I.M	
	R576	NRSA63J-181X	RES.I.M	
	R577	NRSA63J-181X	RES.I.M	
	R578	NRSA63J-181X	RES.I.M	
	R579	NRSA63J-181X	RES.I.M	
	R580	NRSA63J-181X	RES.I.M	
	R581	NRSA63J-101X	METAL GLA	

■DVD Servo Control P.C.B.

BLOCK NO 01

⚠	Item	Parts Number	Description	Area
	R582	NRSA63J-0R0X	RES. C.M	
	R583	NRVA63D-471X	CONST.MET	
	R584	NRVA63D-103NY	CONST.MET	
	R585	NRVA63D-471X	CONST.MET	
	R1203	NRSA63J-472X	RES. C.M	
	R1204	NRSA63J-332X	RES. C.M	
	R1205	NRSA63J-222X	MG RES.	
	R1207	NRSA63J-330X	MG RES.	
	R1208	NRSA63J-330X	MG RES.	
	R1217	NRSA63J-102X	RES. C.M	
	R1220	NRSA63J-330X	MG RES.	
	R1522	NRSA63J-332X	RES. C.M	
	R1523	NRSA63J-222X	MG RES.	
	R1524	NRSA63J-332X	RES. C.M	
	R1525	NRSA63J-222X	MG RES.	
	R1542	NRSA02J-0R0X	RES. C.M	
	R1543	NRSA02J-0R0X	RES. C.M	
	R1544	NRSA02J-0R0X	RES. C.M	
		OTHERS		
	K101	NQR0007-002X	BANDPASS FILTER	
	K102	NQR0007-002X	BANDPASS FILTER	
	K103	NQR0007-002X	BANDPASS FILTER	
	K104	NQR0007-002X	BANDPASS FILTER	
	K105	NQR0007-002X	BANDPASS FILTER	
	K106	NQR0007-002X	BANDPASS FILTER	
	K107	NQR0007-002X	BANDPASS FILTER	
	K108	NQR0007-002X	BANDPASS FILTER	
	K109	NQR0007-002X	BANDPASS FILTER	
	K110	NQR0007-002X	BANDPASS FILTER	
	K111	NQR0007-002X	BANDPASS FILTER	
	K201	NQR0007-002X	BANDPASS FILTER	
	K301	NQR0007-002X	BANDPASS FILTER	
	K302	NQR0007-002X	BANDPASS FILTER	
	K305	NQR0007-002X	BANDPASS FILTER	
	K306	NQR0007-002X	BANDPASS FILTER	
	K402	NQR0007-002X	BANDPASS FILTER	
	K403	NQR0007-002X	BANDPASS FILTER	
	K501	NQR0007-002X	BANDPASS FILTER	
	K502	NQR0007-002X	BANDPASS FILTER	
	K503	NQR0007-002X	BANDPASS FILTER	
	K505	NQR0007-002X	BANDPASS FILTER	
	K507	NQR0007-002X	BANDPASS FILTER	
	K510	NQR0007-002X	BANDPASS FILTER	
	K511	NQR0007-002X	BANDPASS FILTER	
	K512	NQR0007-002X	BANDPASS FILTER	
	K513	NQR0007-002X	BANDPASS FILTER	
	K514	NQR0007-002X	BANDPASS FILTER	
	K515	NQR0007-002X	BANDPASS FILTER	
	K516	NQR0007-002X	BANDPASS FILTER	
	K517	NQR0007-002X	BANDPASS FILTER	
	K518	NQR0007-002X	BANDPASS FILTER	
	K519	NQR0007-002X	BANDPASS FILTER	
	K520	NQR0007-002X	BANDPASS FILTER	
	K521	NQR0007-002X	BANDPASS FILTER	
	K522	NQR0007-002X	BANDPASS FILTER	
	K523	NQR0007-002X	BANDPASS FILTER	
	K525	NQR0007-002X	BANDPASS FILTER	
	K526	NQR0007-002X	BANDPASS FILTER	
	K527	NQR0007-002X	BANDPASS FILTER	
	K528	NQR0007-002X	BANDPASS FILTER	
	K529	NQR0007-002X	BANDPASS FILTER	
	K530	NQR0007-002X	BANDPASS FILTER	
	K532	NQR0007-002X	BANDPASS FILTER	
	K533	NQR0007-002X	BANDPASS FILTER	
	K534	NQR0007-002X	BANDPASS FILTER	
	K535	NQR0007-002X	BANDPASS FILTER	
	K536	NQR0007-002X	BANDPASS FILTER	

⚠	Item	Parts Number	Description	Area
	K537	NQR0007-002X	BANDPASS FILTER	
	K541	NQR0201-001X	FERRITE BEADS	
	K545	NQR0269-001X	FERRITE BEADS	
	K551	NQR0007-002X	BANDPASS FILTER	
	K552	NQR0007-002X	BANDPASS FILTER	
	K553	NQR0007-002X	BANDPASS FILTER	
	K554	NQR0007-002X	BANDPASS FILTER	
	K555	NQR0007-002X	BANDPASS FILTER	
	K556	NQR0007-002X	BANDPASS FILTER	
	K557	NQR0007-002X	BANDPASS FILTER	
	K571	NQR0007-002X	BANDPASS FILTER	
	L241	NQL044K-100X	INDUCTOR C.M	
	X301	NAX0277-001X	CRYSTAL	
	CN101	QGF1016C2-35W	CONNECT TERMINAL	
	CN102	QGF1016C2-05W	CONNECT TERMINAL	
	CN103	QGA1201C2-11X	CONNECT TERMINAL	
	CN501	QGA2001C2-11X	CONNECT TERMINAL	
	CN502	QGF1016C2-35W	CONNECT TERMINAL	
	CN503	QGA2001C2-10X	CONNECT TERMINAL	

■D.C.Regulator P.C.B.

BLOCK NO 02

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC831	M66004SP	I.C(M)	
	IC832	GP1U271X	INFRARED DETECT UNIT	
⚠	IC901	STR-F6652	I.C(M)	
	IC951	PQ05RF2	I.C(HYBRID)	
	IC953	LM2940CT-5.0	I.C(MONO-ANALOG)	
		DIODES		
	D831	SLR-342VC-T	L.E.D.	
	D833	SLR-342DC-T	L.E.D.	
	D834	SLR-342YC-T	LED I.M	
	D835	SLR-342YC-T	LED I.M	
	D836	SLR-342YC-T	LED I.M	
	D839	SLR-342MC-T	LED I.M	
	D842	1SS119-02-T2	SI DIODE	
	D843	1SS119-02-T2	SI DIODE	
	D844	1SS119-02-T2	SI DIODE	
	D845	1SS119-02-T2	SI DIODE	
	D848	SLR-342MC-T	LED I.M	
	D849	SLR-342MC-T	LED I.M	
	D850	SLR-342MC-T	LED I.M	
	D851	SLR-342MC-T	LED I.M	
	D852	SLR-342MC-T	LED I.M	
⚠	D901	S1WB/A/60-4101	SI.DIODE	
	D902	ERA18-04-T2	DIODE	
	D903	ERA18-04-T2	DIODE	
	D904	ERA18-04-T2	DIODE	
	D908	ERA18-04-T2	DIODE	
	D910	ERA18-04-T2	DIODE	
	D911	1SS133-T2	SI.DIODE	
	D950	MTZJ27C-T2	Z.DIODE I.M	
⚠	D951	ERA18-04-T2	DIODE	
⚠	D952	ERA18-04-T2	DIODE	
⚠	D953	FMB-24	SI.DIODE	
⚠	D954	ERA18-04-T2	DIODE	
⚠	D956	ERA18-04-T2	DIODE	
⚠	D957	ERA18-04-T2	DIODE	
	D960	MTZJ2.0A-T2	Z.DIODE I.M	
	D961	MTZJ12C-T2	ZENER DIODE	
	D962	MTZJ12C-T2	ZENER DIODE	
	D963	1SS133-T2	SI.DIODE	
	D964	1SS133-T2	SI.DIODE	
	D965	MTZJ5.1C-T2	ZENER DIODE	
	D970	1SS133-T2	SI.DIODE	
	D971	MTZJ3.9B-T2	Z DIODE	
	D972	1SS133-T2	SI.DIODE	
	D973	1SS133-T2	SI.DIODE	
	D974	1SS133-T2	SI.DIODE	
		TRANSISTORS		
	Q831	DTC114YS-T	TRANSISTOR	
	Q832	DTC114YS-T	TRANSISTOR	
	Q833	DTC114YS-T	TRANSISTOR	
	Q834	DTC114YS-T	TRANSISTOR	
	Q835	DTC114YS-T	TRANSISTOR	
	Q836	DTC114YS-T	TRANSISTOR	
	Q837	DTC114YS-T	TRANSISTOR	
	Q838	UN6211-T	DIGITAL TRANSISTOR	
	Q839	UN6211-T	DIGITAL TRANSISTOR	
	Q840	UN6211-T	DIGITAL TRANSISTOR	
	Q951	2SC2060/QR/-T	TRANSISTOR	
	Q952	DTA144ES-T	TRANSISTOR	
	Q953	2SB1565/EF/	SI.TRANSISTOR	
	Q954	2SC1740S/RS/-T	SI.TRANSISTOR	
	Q955	DTA114YS-T	TRANSISTOR	
	Q956	DTC144ES-T	TRANSISTOR	
	Q957	2SD2394/EF/	TRANSISTOR	
	Q958	2SA933S/RS/-T	TRANSISTOR	
	Q959	DTC114YS-T	TRANSISTOR	
	Q960	DTA144ES-T	TRANSISTOR	
	Q961	2SC1740S/RS/-T	SI.TRANSISTOR	
	Q962	2SA933S/RS/-T	TRANSISTOR	
	Q964	2SB1565/EF/	SI.TRANSISTOR	
	Q965	2SC1740S/RS/-T	SI.TRANSISTOR	
	Q966	2SA933S/RS/-T	TRANSISTOR	
		CAPACITORS		
	C832	QER61AM-476Z	47MF 10V E CAP.	
	C833	QCBB1HK-101Y	100PF 50V CER.CAP.	
	C834	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C835	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C836	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C837	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C838	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C839	QER61AM-226Z	22MF 10V E CAP.	
	C841	QCFB1HZ-104Y	0.1MF 50V CER.CAP.	
	C842	QER51HM-475	4.7MF 50V AL E.CAP.	
⚠	C902	QFZ9067-683	0.068MF METAL.MYLAR	
⚠	C905	QCZ9079-102	1000PF CER.CAP.	
⚠	C906	QCZ9079-102	1000PF CER.CAP.	
	C907	QEZ0374-826	82MF AL E.CAP.	
	C908	QCZ0136-332Z	3300PF CER.CAP.	
	C909	QCZ0136-101Z	100PF CER.CAP.	
	C910	QCS21HJ-221	220PF 50V CER.CAP.	
	C913	QCZ0136-221Z	220PF CER.CAP.	
	C914	QEMU1EM-396Z	39MF 25V AL E.CAP.	
	C915	QCBB1HK-471Y	470PF 50V CER.CAP.	
⚠	C916	QCZ9079-332	3300PF CER.CAP.	
	C918	QFVJ1HJ-104Z	0.1MF 50V TF CAP.	
	C919	QCFB1HZ-104Y	0.1MF 50V CER.CAP.	
	C931	QCZ0205-155	1.5MF 25V C.CAP.	
	C932	QCZ0205-155	1.5MF 25V C.CAP.	
	C951	QCS21HJ-101A	100PF 50V CER.CAP.	
	C952	QCS21HJ-101A	100PF 50V CER.CAP.	
	C953	QCS21HJ-101A	100PF 50V CER.CAP.	
	C954	QCS21HJ-101A	100PF 50V CER.CAP.	
	C956	QCS21HJ-101A	100PF 50V CER.CAP.	
	C957	QCS21HJ-101A	100PF 50V CER.CAP.	
	C960	QEMU1AM-107Z	100MF 10V AL E.CAP.	
	C961	QCZ0205-155	1.5MF 25V C.CAP.	
	C962	QETB1HM-226E	22MF 50V E.CAP.	
	C963	QEMU1VM-396Z	39MF 35V AL E.CAP.	
	C964	QETB1HM-226E	22MF 50V E.CAP.	
	C965	QEMS1AM-108	1000MF 10V AL E.CAP.	
	C966	QETB1AM-477	470MF 10V E.CAP.	
	C967	QFVJ1HJ-104Z	0.1MF 50V TF CAP.	
	C968	QFVJ1HJ-104Z	0.1MF 50V TF CAP.	
	C969	QETB1AM-227	220MF 10V E.CAP.	
	C970	QFVJ1HJ-104Z	0.1MF 50V TF CAP.	
	C973	QETC1AM-107ZN	100MF 10V E.CAP.	
	C976	QFVJ1HJ-104Z	0.1MF 50V TF CAP.	
	C977	QFVJ1HJ-104Z	0.1MF 50V TF CAP.	
	C978	QETC1AM-107ZN	100MF 10V E.CAP.	
	C979	QEMS1CM-827	820MF 16V AL E.CAP.	
	C981	QCZ0205-155	1.5MF 25V C.CAP.	
	C982	QEMS1EM-567	560MF 25V AL E.CAP.	
	C984	QETC1EM-227ZN	220MF 25V AL E.CAP.	
	C985	QETB1CM-476	47MF 16V AL E.CAP.	
	C986	QETB1CM-107	100MF 16V AL E.CAP.	
	C987	QEMU1EM-187Z	180MF 25V AL E.CAP.	
	C989	QETB1EM-107	100MF 25V AL E.CAP.	
	C990	QETB1CM-476	47MF 16V AL E.CAP.	
	C991	QETB1CM-107	100MF 16V AL E.CAP.	
	C992	QETN1HM-474Z	0.47MF 50V AL E.CAP.	
	C993	QCS21HJ-101A	100PF 50V CER.CAP.	
	C994	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C995	QETC1CM-227Z	220MF 16V AL E.CAP.	

■D.C.Regulator P.C.B.

BLOCK NO 02

⚠	Item	Parts Number	Description	Area
	C996	QETB1CM-226	22MF 16V E.CAP.	
	C997	QETC1CM-227Z	220MF 16V AL E.CAP.	
		RESISTORS		
	R831	QRE141J-331Y	330 1/4W C RES.	
	R832	QRE141J-151Y	150 1/4W C RES.	
	R833	QRE141J-331Y	330 1/4W C RES.	
	R834	QRE141J-151Y	150 1/4W C RES.	
	R835	QRE141J-151Y	150 1/4W C RES.	
	R836	QRE141J-151Y	150 1/4W C RES.	
	R837	QRE141J-472Y	4.7K 1/4W C RES.	
	R838	QRE141J-331Y	330 1/4W C RES.	
	R839	QRE141J-331Y	330 1/4W C RES.	
	R840	QRE141J-472Y	4.7K 1/4W C RES.	
	R841	QRE141J-331Y	330 1/4W C RES.	
	R842	QRE141J-331Y	330 1/4W C RES.	
	R843	QRE141J-273Y	27K 1/4W CARBON RES.	
	R845	QRE141J-102Y	1K 1/4W C RES.	
	R846	QRE141J-102Y	1K 1/4W C RES.	
	R847	QRE141J-102Y	1K 1/4W C RES.	
	R848	QRE141J-102Y	1K 1/4W C RES.	
	R849	QRE141J-222Y	2.2K 1/4W C RES.	
	R850	QRE141J-222Y	2.2K 1/4W C RES.	
	R851	QRE141J-331Y	330 1/4W C RES.	
	R900	QRE141J-221Y	220 1/4W C RES.	
	R901	QRL01DJ-683X	68K 1W OXIDE METAL	
	R903	QRE141J-270Y	27 1/4W C RES.	
	R904	QRE141J-222Y	2.2K 1/4W C RES.	
	R905	QRL027J-104	100K 2W OMF RES.	
	R906	QRE141J-681Y	680 1/4W CARBON RES.	
	R907	QRT022J-R56	0.56 2W UNF.MF.RES.	
	R908	QRE141J-332Y	3.3K 1/4W C RES.	
	R911	QRE141J-105Y	1M 1/4W C RES.	
	R952	QRE141J-103Y	10K 1/4W CARBON RES.	
	R953	QRE141J-103Y	10K 1/4W CARBON RES.	
⚠	R954	QRZ9006-4R7X	4.7 F RES.	
	R955	QRE141J-223Y	22K 1/4W C RES.	
	R956	QRE141J-103Y	10K 1/4W CARBON RES.	
	R957	QRE141J-103Y	10K 1/4W CARBON RES.	
	R958	QRE141J-102Y	1K 1/4W C RES.	
	R959	QRE141J-102Y	1K 1/4W C RES.	
	R960	QRE141J-101Y	100 1/4W C RES.	
	R961	QRE141J-681Y	680 1/4W CARBON RES.	
	R962	QRE141J-105Y	1M 1/4W C RES.	
	R963	QRE141J-101Y	100 1/4W C RES.	
	R964	QRE141J-105Y	1M 1/4W C RES.	
	R965	QRE141J-103Y	10K 1/4W CARBON RES.	
⚠	R966	QRK126J-2R7X	2.7 1/2W C RES.	
⚠	R967	QRZ9005-100X	10 F RES I/M	
⚠	R968	QRK126J-2R7X	2.7 1/2W C RES.	
	R969	QRE141J-221Y	220 1/4W C RES.	
	R971	QRE141J-472Y	4.7K 1/4W C RES.	
	R972	QRE141J-152Y	1.5K 1/4W CARBON RES.	
	R973	QRE141J-102Y	1K 1/4W C RES.	
	R974	QRE141J-562Y	5.6K 1/4W C RES.	
	R975	QRE141J-562Y	5.6K 1/4W C RES.	
		QRE141J-683Y	68K 1/4W C RES.	
	R976	QRE141J-221Y	220 1/4W C RES.	
	R980	QRE141J-821Y	820 1/4W CARBON RES.	
	RA801	QRB039J-472	4.7K 1/10WR.NETWORK	
	RA802	QRB039J-472	4.7K 1/10WR.NETWORK	
		OTHERS		
	K902	QQR0601-001Z	F.BEADS I.M	
	L951	QQL01BK-R22Z	INDUCTOR	
	L952	QQL31AK-101Z	INDUCTOR	
	L955	QQL31AK-101Z	INDUCTOR	
	L957	QQL31AK-101Z	INDUCTOR	
	L959	QQL31AK-101Z	INDUCTOR	
	S831	QVQ0123-B15	VARIABLE RES.	
	S832	QSW0499-001Z	TACT SWITCH	
	S833	QSW0499-001Z	TACT SWITCH	
	S834	QSW0499-001Z	TACT SWITCH	
	S835	QSW0499-001Z	TACT SWITCH	
	S840	QSW0499-001Z	TACT SWITCH	
	S844	QSW0499-001Z	TACT SWITCH	
	S845	QSW0499-001Z	TACT SWITCH	
	S846	QSW0499-001Z	TACT SWITCH	
	S847	QSW0499-001Z	TACT SWITCH	
	S848	QSW0499-001Z	TACT SWITCH	
	S860	QSW0499-001Z	TACT SWITCH	
	S861	QSW0499-001Z	TACT SWITCH	
	S862	QSW0499-001Z	TACT SWITCH	
	S863	QSW0499-001Z	TACT SWITCH	
	S864	QSW0499-001Z	TACT SWITCH	
	S865	QSW0499-001Z	TACT SWITCH	
	S866	QSW0499-001Z	TACT SWITCH	
	S867	QSW0499-001Z	TACT SWITCH	
⚠	T901	QQR0894-001	LINE FILTER	
⚠	T902	QQS0028-001	SWITCHING TRANSFORMER	
	BK901	E409182-001SM	EARTH TERMINAL	
	CN805	WJP0001-002A	SOCKET WIRE ASSY	
	CN807	QGD2501C1-05Z	SOCKET ASSY	
	CN831	QGF1016C1-27	CONNECTOR	
	CN832	QGB2014N1-06	CONNECTOR	
	CN833	QGB2014P1-06	CONNECTOR	
	CN834	QGD2501C1-03Z	SOCKET ASSY	
⚠	CP951	ICP-N10-T	ICP I.M	
	DI831	QLF0049-001	FLUORESCENT DISPLAY TUBE	
	EP951	QNZ0136-001Z	EARTH PLATE	
	FC901	QNG0003-001Z	FUSE CLIP	
	FC902	QNG0003-001Z	FUSE CLIP	
	FL901	E67132-TR80	FUSE LABEL	
	FW831	QUM106-15DGZ4	FLAT WIRE	
	FW834	QUM103-08DGZ4	FLAT WIRE	
	HS901	LE40597-001A	HEAT SINK	
	HS964	LE40505-001A	HEAT SINK	
	JT801	QGD2501C1-03Z	SOCKET ASSY	
	JT806	QGD2501C1-03Z	SOCKET ASSY	
	JT811	QGD2501C1-03Z	SOCKET ASSY	
	JT816	QGD2501C1-03Z	SOCKET ASSY	
	PC901	PC123F	I.C(PHOTO COUPLER)	
	PC902	PC123F	I.C(PHOTO COUPLER)	
	TB901	QNZ0079-001Z	TAB I.M	
	TB902	QNZ0079-001Z	TAB I.M	

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⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC611	NJM78M05FA	I.C(MONO-ANALOG)	
	IC621	NJM2267D	I.C(M)	
	IC622	NJM2268D	I.C(MONO-ANALOG)	
	IC623	BA7652AF-X	I.C(M)	
	IC641	M51494L	I.C(M)	
	IC642	BU2092	I.C(M)	
	IC651	NJM78L09A-T	I.C(M)	
	IC702	MN35503	I.C(DIGI-MOS)	
	IC703	NJM4580L	I.C(MONO-ANALOG)	
	IC704	NJM4580L	I.C(MONO-ANALOG)	
	IC714	M30622EC-FP	I.C(M)	
	IC715	TC7SH08F-X	I.C(M)	
	IC716	AK93C45AF-W	I.C(M)	
	IC717	PST574CMT-X	I.C(MONO-ANALOG)	
	IC718	NJM78M05FA	I.C(MONO-ANALOG)	
	IC850	NJM4580E-W	I.C(M)	
		DIODES		
	D603	1SS133-T2	SI.DIODE	
	D604	1SS133-T2	SI.DIODE	
	D701	KV1555N-T	VARI-CAPA DIODE	
	D702	KV1555N-T	VARI-CAPA DIODE	
	D703	MTZJ5.1C-T2	ZENER DIODE	
	D704	1SS133-T2	SI.DIODE	
	D705	1SS133-T2	SI.DIODE	
	D706	1SS133-T2	SI.DIODE	
	D707	1SS133-T2	SI.DIODE	
	D715	MTZJ3.3B-T2	ZENER DIODE I/M	
	D717	1SS133-T2	SI.DIODE	
	D718	1SS133-T2	SI.DIODE	
	D799	1SS133-T2	SI.DIODE	
		TRANSISTORS		
	Q621	2SA933/RS/-T	TR.I/M	
	Q622	2SA933/RS/-T	TR.I/M	
	Q623	2SA933/RS/-T	TR.I/M	
	Q641	2SC1741A/QR/-T	TR.I/M	
	Q642	2SA933/RS/-T	TR.I/M	
	Q671	2SA933/RS/-T	TR.I/M	
	Q672	2SA933/RS/-T	TR.I/M	
	Q681	2SD1302/ST/-T	TR.I/M	
	Q682	2SD1302/ST/-T	TR.I/M	
	Q691	DTC114ES	DIGITAL TRANSISTOR	
	Q704	DTA114ES	DIGITAL TRANSISTOR	
	Q705	2SD1302/ST/-T	TR.I/M	
	Q706	2SD1302/ST/-T	TR.I/M	
	Q707	DTA114ES	DIGITAL TRANSISTOR	
	Q708	DTA114ES	DIGITAL TRANSISTOR	
	Q711	2SD1302/ST/-T	TR.I/M	
	Q712	2SD1302/ST/-T	TR.I/M	
	Q724	DTA114ES	DIGITAL TRANSISTOR	
	Q851	2SD1302/ST/-T	TR.I/M	
	Q852	2SD1302/ST/-T	TR.I/M	
		CAPACITORS		
	C611	QTE1C27-228	2200MF 16V E.CAPA.	
	C612	QTE0J28-227Z	220MF 6.3V E.CAPA.	
	C621	QCZ0205-155	1.5MF 25V C.CAP.	
	C622	QDX31EM-103Z	0.01MF 25V C CAP.	
	C623	QDX31EM-103Z	0.01MF 25V C CAP.	
	C624	QCZ0205-155	1.5MF 25V C.CAP.	
	C626	QTE1A28-108Z	1000MF 10V E CAP.	
	C627	QTE1A28-107Z	100MF 10V E CAP.	
	C628	QDX31EM-473Z	0.047MF 25V C CAP.	
	C629	QTE1A28-107Z	100MF 10V E CAP.	
	C630	QDX31EM-473Z	0.047MF 25V C CAP.	
	C641	QDX31EM-104Z	0.1MF 25V C CAP.	
	C642	QDC31HJ-470Z	47PF 50V C.CAPA. I.M	
	C643	QTE1C28-476Z	47MF 16V E.CAPA. I.M	
	C644	QDC31HJ-221Z	220PF 50V C.CAPA. I.M	
	C645	QCZ0205-155	1.5MF 25V C.CAP.	

⚠	Item	Parts Number	Description	Area
	C646	QDX31EM-104Z	0.1MF 25V C CAP.	
	C647	QDC31HJ-101Z	100PF 50V C.CAPA. I.M	
	C648	QCZ0205-155	1.5MF 25V C.CAP.	
	C649	QDX31EM-473Z	0.047MF 25V C CAP.	
	C650	QTE1C28-227Z	220MF 16V AL E.CAP.	
	C651	QTE1A28-107Z	100MF 10V E.CAPA. I.M	
	C652	QDX31EM-473Z	0.047MF 25V C CAP.	
	C653	QTE1C28-106Z	10MF 16V E.CAPA. I.M	
	C654	QTE1C28-227Z	220MF 16V AL E.CAP.	
	C671	QDX31EM-473Z	0.047MF 25V C CAP.	
	C672	QDX31EM-104Z	0.1MF 25V C CAP.	
	C673	QCZ0205-155	1.5MF 25V C.CAP.	
	C674	QTE1A28-108Z	1000MF 10V E CAP.	
	C675	QTE1A28-107Z	100MF 10V E CAP.	
	C676	QDX31EM-473Z	0.047MF 25V C CAP.	
	C685	QCS31HJ-471Z	470PF 50V CER.CAP.	
	C686	QCS31HJ-471Z	470PF 50V CER.CAP.	
	C691	QDCB1HJ-100Y	10PF 50V C CAP.	
	C694	QTE1A28-108Z	1000MF 10V E CAP.	
	C695	QDX31EM-104Z	0.1MF 25V C CAP.	
	C704	QFVJ1HJ-474Z	0.47MF 50V CAP.	
	C705	QDYB1CM-103Y	0.01MF 16V CER.CAP.	
	C706	QCGB1HK-102	1000PF 50V CER.CAP.	
	C707	QCGB1HK-102	1000PF 50V CER.CAP.	
	C708	QDX31EM-473Z	0.047MF 25V C CAP.	
	C713	QETB0JM-477	470MF 6.3V AL E.CAP.	
	C715	QETB0JM-477	470MF 6.3V AL E.CAP.	
	C717	NCB21CK-104X	0.1MF 16V CER.CAP.	
	C718	QETB1AM-227	220MF 10V E.CAP.	
	C719	NCB21CK-104X	0.1MF 16V CER.CAP.	
	C720	NCS21HJ-102X	1000PF 50V C CAP.	
	C721	NCB21CK-104X	0.1MF 16V CER.CAP.	
	C722	NCB21CK-104X	0.1MF 16V CER.CAP.	
	C723	NCB21CK-104X	0.1MF 16V CER.CAP.	
	C724	QTE0J28-477Z	470MF 6.3V E.CAP.	
	C725	NCF21CZ-155X	1.5MF 16V C.CAPA. C.M	
	C726	QCZ0205-155	1.5MF 25V C.CAP.	
	C727	QCZ0205-155	1.5MF 25V C.CAP.	
	C728	QTE0J28-477Z	470MF 6.3V E.CAP.	
	C729	QTE0J28-477Z	470MF 6.3V E.CAP.	
	C730	QCZ0205-155	1.5MF 25V C.CAP.	
	C731	QCZ0205-155	1.5MF 25V C.CAP.	
	C732	QCZ0205-155	1.5MF 25V C.CAP.	
	C733	QTE0J28-477Z	470MF 6.3V E.CAP.	
	C734	QCF31HZ-473Z	0.047MF 50V C CAP.	
	C735	QCF31HZ-103Z	0.01MF 50V C CAP.	
	C736	QDYB1CM-103Y	0.01MF 16V CER.CAP.	
	C737	QFLB1HJ-152	1500PF 50V MYLAR CAP.	
	C738	QFLC1HJ-181ZM	180PF 50V MYLAR CAP.	
	C739	QFN31HJ-333Z	0.033MF 50V MYLAR CAP.	
	C740	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C741	QFLB1HJ-152	1500PF 50V MYLAR CAP.	
	C742	QFLB1HJ-182	1800PF 50V MYLAR CAP.	
	C743	QTE1C28-477Z	470MF 16V E.CAPA. I.M	
	C744	QTE1C28-477Z	470MF 16V E.CAPA. I.M	
	C745	QFLB1HJ-152	1500PF 50V MYLAR CAP.	
	C746	QFLC1HJ-181ZM	180PF 50V MYLAR CAP.	
	C747	QFN31HJ-333Z	0.033MF 50V MYLAR CAP.	
	C748	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C749	QFLB1HJ-152	1500PF 50V MYLAR CAP.	
	C750	QFLB1HJ-182	1800PF 50V MYLAR CAP.	
	C751	QTE1C28-477Z	470MF 16V E.CAPA. I.M	
	C752	QTE1C28-477Z	470MF 16V E.CAPA. I.M	
	C753	QTE1E28-476Z	47MF 25V E.CAPA. I.M	
	C754	QTE1E28-476Z	47MF 25V E.CAPA. I.M	
	C755	QDXB1CM-152Y	1500PF 16V C CAP.	
	C760	QFLB1HJ-152	1500PF 50V MYLAR CAP.	
	C761	QETB1EM-476	47MF 25V AL E.CAP.	
	C762	QFLB1HJ-152	1500PF 50V MYLAR CAP.	

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⚠	Item	Parts Number	Description	Area
	C763	QETB1EM-476	47MF 25V AL E.CAP.	
	C764	QFLB1HJ-152	1500PF 50V MYLAR CAP.	
	C851	QTE1C28-476Z	47MF 16V E.CAPA. I.M	
	C852	QTE1C28-476Z	47MF 16V E.CAPA. I.M	
	C853	QTE1C28-476Z	47MF 16V E.CAPA. I.M	
	C854	QTE1C28-476Z	47MF 16V E.CAPA. I.M	
	C855	NCS21HJ-101X	100PF 50V C CAP.	
	C856	NCS21HJ-101X	100PF 50V C CAP.	
	C857	NCS21HJ-151X	150PF 50V CER.CAP.	
	C858	NCS21HJ-151X	150PF 50V CER.CAP.	
	C859	QTE0J28-227Z	220MF 6.3V E.CAPA. I.M	
	C860	QTE0J28-227Z	220MF 6.3V E.CAPA. I.M	
	C861	QFLB1HJ-103	0.01MF 50V MYLAR CAP.	
	C862	QFLB1HJ-103	0.01MF 50V MYLAR CAP.	
	C865	NCS21HJ-471X	470PF 50V C CAP.	
	C866	NCS21HJ-471X	470PF 50V C CAP.	
	C871	NCS21HJ-221X	220PF 50V C CAP.	
	C872	NCS21HJ-221X	220PF 50V C CAP.	
	C891	QCFB1HZ-473Y	0.047MF 50V CER.CAP.	
	C899	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C1024	QTE1C28-477Z	470MF 16V E.CAPA. I.M	
	C1025	QTE1C28-477Z	470MF 16V E.CAPA. I.M	
	C1026	QTE0J28-477Z	470MF 6.3V E.CAP.	
	C1033	QTE1E28-475Z	4.7MF 25V E.CAPA. I.M	
	C1034	QTE1E28-475Z	4.7MF 25V E.CAPA. I.M	
	C1037	QTE1C28-107Z	100MF 16V E.CAPA. I.M	
	C1038	NCB21CK-104X	0.1MF 16V CER.CAP.	
	C1039	QTE1A28-107Z	100MF 10V E.CAPA. I.M	
	C1040	QTE1E28-476Z	47MF 25V E.CAPA. I.M	
	C1041	NCS21HJ-151X	150PF 50V CER.CAP.	
	C1042	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C1048	NCS21HJ-152X	1500PF 50V C.CAPA. C.M	
		RESISTORS		
	R615	QRE141J-102Y	1K 1/4W C RES.	
	R621	QRE141J-752Y	7.5K 1/4W C RES.	
	R622	QRE141J-752Y	7.5K 1/4W C RES.	
	R623	QRE141J-102Y	1K 1/4W C RES.	
	R624	QRE141J-102Y	1K 1/4W C RES.	
	R625	QRE141J-102Y	1K 1/4W C RES.	
	R626	QRE141J-221Y	220 1/4W C RES.	
	R627	QRE141J-102Y	1K 1/4W C RES.	
	R629	QRE141J-102Y	1K 1/4W C RES.	
	R630	QRE141J-221Y	220 1/4W C RES.	
	R631	QRE141J-222Y	2.2K 1/4W C RES.	
	R633	QRE141J-750Y	75 1/4W C.RES. I.M	
	R641	QRE141J-471Y	470 1/4W C RES.	
	R642	QRE141J-471Y	470 1/4W C RES.	
	R643	QRE141J-911Y	910 1/4W C RES.	
	R644	QRE141J-102Y	1K 1/4W C RES.	
	R645	QRE141J-751Y	750 1/4W C RES.	
	R646	QRE141J-222Y	2.2K 1/4W C RES.	
	R647	QRE141J-221Y	220 1/4W C RES.	
	R648	QRE141J-102Y	1K 1/4W C RES.	
	R650	QRE141J-153Y	15K 1/4W C RES.	
	R651	QRE141J-243Y	24K 1/4W C RES.	
	R652	QRE141J-334Y	330K 1/4W C RES.	
	R653	QRE141J-164Y	160K 1/4W C RES.	
	R654	QRE141J-823Y	82K 1/4W C RES.	
	R655	QRE141J-393Y	39K 1/4W C RES.	
	R656	QRE141J-203Y	20K 1/4W C RES.	
	R657	QRE141J-103Y	10K 1/4W CARBON RES.	
	R658	QRE141J-334Y	330K 1/4W C RES.	
	R659	QRE141J-164Y	160K 1/4W C RES.	
	R660	QRE141J-823Y	82K 1/4W C RES.	
	R661	QRE141J-393Y	39K 1/4W C RES.	
	R662	QRE141J-203Y	20K 1/4W C RES.	
	R663	QRE141J-103Y	10K 1/4W CARBON RES.	
	R672	QRE141J-562Y	5.6K 1/4W C RES.	
	R673	QRE141J-102Y	1K 1/4W C RES.	

⚠	Item	Parts Number	Description	Area
	R674	QRE141J-102Y	1K 1/4W C RES.	
	R675	QRE141J-102Y	1K 1/4W C RES.	
	R676	QRE141J-750Y	75 1/4W C.RES. I.M	
	R679	QRE141J-102Y	1K 1/4W C RES.	
	R680	QRE141J-102Y	1K 1/4W C RES.	
	R681	QRE141J-221Y	220 1/4W C RES.	
	R682	QRE141J-222Y	2.2K 1/4W C RES.	
	R683	QRE141J-750Y	75 1/4W C.RES. I.M	
	R684	QRE141J-103Y	10K 1/4W CARBON RES.	
	R685	QRE141J-151Y	150 1/4W C RES.	
	R686	QRE141J-151Y	150 1/4W C RES.	
	R687	QRE141J-103Y	10K 1/4W CARBON RES.	
	R688	QRE141J-103Y	10K 1/4W CARBON RES.	
	R694	QRE141J-750Y	75 1/4W C.RES. I.M	
	R695	QRE141J-750Y	75 1/4W C.RES. I.M	
	R696	QRE141J-102Y	1K 1/4W C RES.	
	R697	QRE141J-102Y	1K 1/4W C RES.	
	R698	QRE141J-104Y	100K 1/4W C RES.	
	R707	NRSA02J-472X	RES. C.M	
	R708	NRSA02J-472X	RES. C.M	
	R711	NRSA02J-102X	RES. C.M	
	R712	NRSA02J-0R0X	RES. C.M	
	R713	NRSA02J-0R0X	RES. C.M	
	R714	NRSA02J-0R0X	RES. C.M	
	R728	QRE141J-333Y	33K 1/4W C RES.	
	R729	QRE141J-102Y	1K 1/4W C RES.	
	R730	QRE141J-333Y	33K 1/4W C RES.	
	R731	QRE141J-104Y	100K 1/4W C RES.	
	R732	QRE141J-333Y	33K 1/4W C RES.	
	R733	QRE141J-104Y	100K 1/4W C RES.	
	R734	QRE141J-181Y	180 1/4W C RES.	
	R735	QRE141J-104Y	100K 1/4W C RES.	
	R736	QRE141J-153Y	15K 1/4W C RES.	
	R737	QRE141J-102Y	1K 1/4W C RES.	
	R738	QRE141J-473Y	47K 1/4W C RES.	
	R739	QRE141J-560Y	56 1/4W C RES.	
	R740	QRE141J-560Y	56 1/4W C RES.	
	R741	QRE141J-471Y	470 1/4W C RES.	
	R742	QRE141J-471Y	470 1/4W C RES.	
	R743	QRE141J-471Y	470 1/4W C RES.	
	R744	QRE141J-471Y	470 1/4W C RES.	
	R745	QRE141J-511Y	510 1/4W C.RES. I.M	
	R746	QRE141J-152Y	1.5K 1/4W CARBON RES.	
	R747	QRE141J-560Y	56 1/4W C RES.	
	R748	QRE141J-101Y	100 1/4W C RES.	
	R749	QRE141J-471Y	470 1/4W C RES.	
	R750	QRE141J-471Y	470 1/4W C RES.	
	R751	QRE141J-471Y	470 1/4W C RES.	
	R752	QRE141J-152Y	1.5K 1/4W CARBON RES.	
	R753	QRE141J-560Y	56 1/4W C RES.	
	R754	QRA14CF-1602Y	16K 1/4W MF.RES. I.M	
	R755	QRE141J-183Y	18K 1/4W CARBON RES.	
	R756	QRA14CF-1602Y	16K 1/4W MF.RES. I.M	
	R757	QRE141J-821Y	820 1/4W CARBON RES.	
	R758	QRE141J-243Y	24K 1/4W C RES.	
	R759	QRE141J-243Y	24K 1/4W C RES.	
	R760	QRE141J-682Y	6.8K 1/4W C RES.	
	R761	QRE141J-362Y	3.6K 1/4W C RES.	
	R762	QRE141J-103Y	10K 1/4W CARBON RES.	
	R763	QRE141J-561Y	560 1/4W C RES.	
	R764	QRE141J-561Y	560 1/4W C RES.	
	R765	QRE141J-105Y	1M 1/4W C RES.	
	R766	QRE141J-221Y	220 1/4W C RES.	
	R767	QRE141J-821Y	820 1/4W CARBON RES.	
	R768	QRE141J-221Y	220 1/4W C RES.	
	R769	QRE141J-183Y	18K 1/4W CARBON RES.	
	R770	QRA14CF-1602Y	16K 1/4W MF.RES. I.M	
	R771	QRE141J-183Y	18K 1/4W CARBON RES.	
	R772	QRA14CF-1602Y	16K 1/4W MF.RES. I.M	

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⚠	Item	Parts Number	Description	Area
	R773	QRE141J-821Y	820 1/4W CARBON RES.	
	R774	QRE141J-243Y	24K 1/4W C RES.	
	R775	QRE141J-243Y	24K 1/4W C RES.	
	R776	QRE141J-682Y	6.8K 1/4W C RES.	
	R777	QRE141J-362Y	3.6K 1/4W C RES.	
	R778	QRE141J-103Y	10K 1/4W CARBON RES.	
	R779	QRE141J-561Y	560 1/4W C RES.	
	R780	QRE141J-561Y	560 1/4W C RES.	
	R781	QRE141J-105Y	1M 1/4W C RES.	
	R782	QRE141J-221Y	220 1/4W C RES.	
	R783	QRE141J-821Y	820 1/4W CARBON RES.	
	R784	QRE141J-221Y	220 1/4W C RES.	
	R785	QRE141J-183Y	18K 1/4W CARBON RES.	
	R786	QRE141J-112Y	1.1K 1/4W C.RES. I.M	
	R787	QRE141J-112Y	1.1K 1/4W C.RES. I.M	
	R788	QRE141J-112Y	1.1K 1/4W C.RES. I.M	
	R789	QRE141J-112Y	1.1K 1/4W C.RES. I.M	
	R790	QRE141J-473Y	47K 1/4W C RES.	
	R796	QRE141J-473Y	47K 1/4W C RES.	
	R850	NRSA02J-472X	RES. C.M	
	R851	NRSA02J-472X	RES. C.M	
	R852	NRSA02J-682X	METAL GLAZE	
	R853	NRSA02J-682X	METAL GLAZE	
	R854	NRSA02J-820X	MG RES.	
	R855	NRSA02J-820X	MG RES.	
	R860	NRSA02J-183X	MG RES.	
	R861	NRSA02J-183X	MG RES.	
	R863	NRSA02J-0R0X	RES. C.M	
	R864	NRSA02J-103X	RES. C.M	
	R865	NRSA02J-103X	RES. C.M	
	R866	NRSA02J-390X	MG RES.	
	R867	NRSA02J-390X	MG RES.	
	R868	NRSA02J-103X	RES. C.M	
	R869	NRSA02J-103X	RES. C.M	
	R870	NRSA02J-220X	MG RES.	
	R871	NRSA02J-220X	MG RES.	
	R872	NRSA02J-104X	METAL GLAZE	
	R873	NRSA02J-104X	METAL GLAZE	
	R874	QRE141J-221Y	220 1/4W C RES.	
	R1003	QRE141J-561Y	560 1/4W C RES.	
	R1004	QRE141J-151Y	150 1/4W C RES.	
	R1005	QRE141J-103Y	10K 1/4W CARBON RES.	
	R1006	QRE141J-273Y	27K 1/4W CARBON RES.	
	R1007	QRE141J-561Y	560 1/4W C RES.	
	R1008	QRE141J-151Y	150 1/4W C RES.	
	R1009	QRE141J-103Y	10K 1/4W CARBON RES.	
	R1010	QRE141J-273Y	27K 1/4W CARBON RES.	
	R1113	NRSA02J-822X	MG RES.	
	R1114	NRSA02J-822X	MG RES.	
	R1119	QRK126J-391X	390 1/2W CARBON RES.	
	R1120	QRE141J-331Y	330 1/4W C RES.	
	R1121	NRSA02J-104X	METAL GLAZE	
	R1122	NRSA02J-750X	RES. C.M	
	R1123	NRSA02J-270X	MG RES.	
	R1124	NRSA02J-2R2X	RES. C.M	
	R1125	NRSA02J-105X	MG RES.	
	R1126	NRSA02J-101X	MG RES.	
	R1127	NRSA02J-472X	RES. C.M	
	R1128	NRSA02J-473X	MG RES.	
	R1130	QRE141J-471Y	470 1/4W C RES.	
	R1152	NRSA02J-0R0X	RES. C.M	
	R1153	NRSA02J-0R0X	RES. C.M	
	R1154	NRSA02J-0R0X	RES. C.M	
	R1156	NRSA02J-0R0X	RES. C.M	
	R1157	NRSA02J-0R0X	RES. C.M	
	R1196	QRE141J-472Y	4.7K 1/4W C RES.	
	VR850	QVQ0281-A24	20K VARIABLE RES.	
		OTHERS		
	J691	QND0019-001	S-CONNECTOR	
	J692	QNN0278-001	PIN JACK	
	J693	QNZ0099-001	CONNECT TERMINAL	
	J702	QNN0113-001	PIN JACK	
	J705	QNN0029-001	PIN JACK	
	J706	GP1F32T	OPTICAL JACK	
	J803	QNS0061-001	6.3 JACK	
	K121	QQR0601-001Z	F.BEADS I.M	
	K343	QQR0601-001Z	F.BEADS I.M	
	K601	QQR0601-001Z	F.BEADS I.M	
	K602	QQR0601-001Z	F.BEADS I.M	
	K702	QQR0601-001Z	F.BEADS I.M	
	K703	QQR0601-001Z	F.BEADS I.M	
	K704	NQR0007-002X	BANDPASS FILTER	
	K705	NQR0007-002X	BANDPASS FILTER	
	K706	NQR0007-002X	BANDPASS FILTER	
	K707	QQR0601-001Z	F.BEADS I.M	
	K708	QQR0601-001Z	F.BEADS I.M	
	K709	QQR0601-001Z	F.BEADS I.M	
	K710	QQR0601-001Z	F.BEADS I.M	
	K711	QQR0601-001Z	F.BEADS I.M	
	K712	NQR0007-002X	BANDPASS FILTER	
	K713	NQR0007-002X	BANDPASS FILTER	
	K714	NQR0007-002X	BANDPASS FILTER	
	K851	QQR0601-001Z	F.BEADS I.M	
	L603	QQR0713-001	NOISE FILTER	
	L604	QQR0783-001	BANDPASS FILTER	
	L703	QQL121M-1R2Y	INDUCTOR I.M	
	S691	QSW0454-001	PUSH SWITCH	
	T701	QQR0880-001	CHOKE COIL	
	X701	QAX0516-001Z	CRYSTAL	
	BK693	LE30696-001A	EARTH PLATE	
	BK803	LE40542-001A	EARTH PLATE	
	CN601	QGA2001C1-10	10P PLUG ASSY	
	CN602	QGD2501C1-04Z	SOCKET ASSY	
	CN701	QGF1016C1-35	CONNECT TERMINAL	
	CN703	QGF1016C1-27	CONNECTOR	
	CN704	QGA2001C1-06	CONNECTOR	
	CN851	QGA2001C1-06	CONNECTOR	
	FS854	E3400-431	FELT SPACER	
	FS855	E3400-431	FELT SPACER	
	FW601	QUM10A-10DGZ4	FLAT WIRE	
	FW702	QUM106-20DGZ4	FLAT WIRE	
	FW703	QUM104-10DGZ4	FLAT WIRE	
	FW710	QUM103-09Z4Z4	FLAT WIRE	
	JT701	QGD2501C1-05Z	SOCKET ASSY	
	JT702	QGD2501C1-05Z	SOCKET ASSY	
	TP601	QGA2001C1-03	3P PLUG ASSY	

■Sub P.C.B.

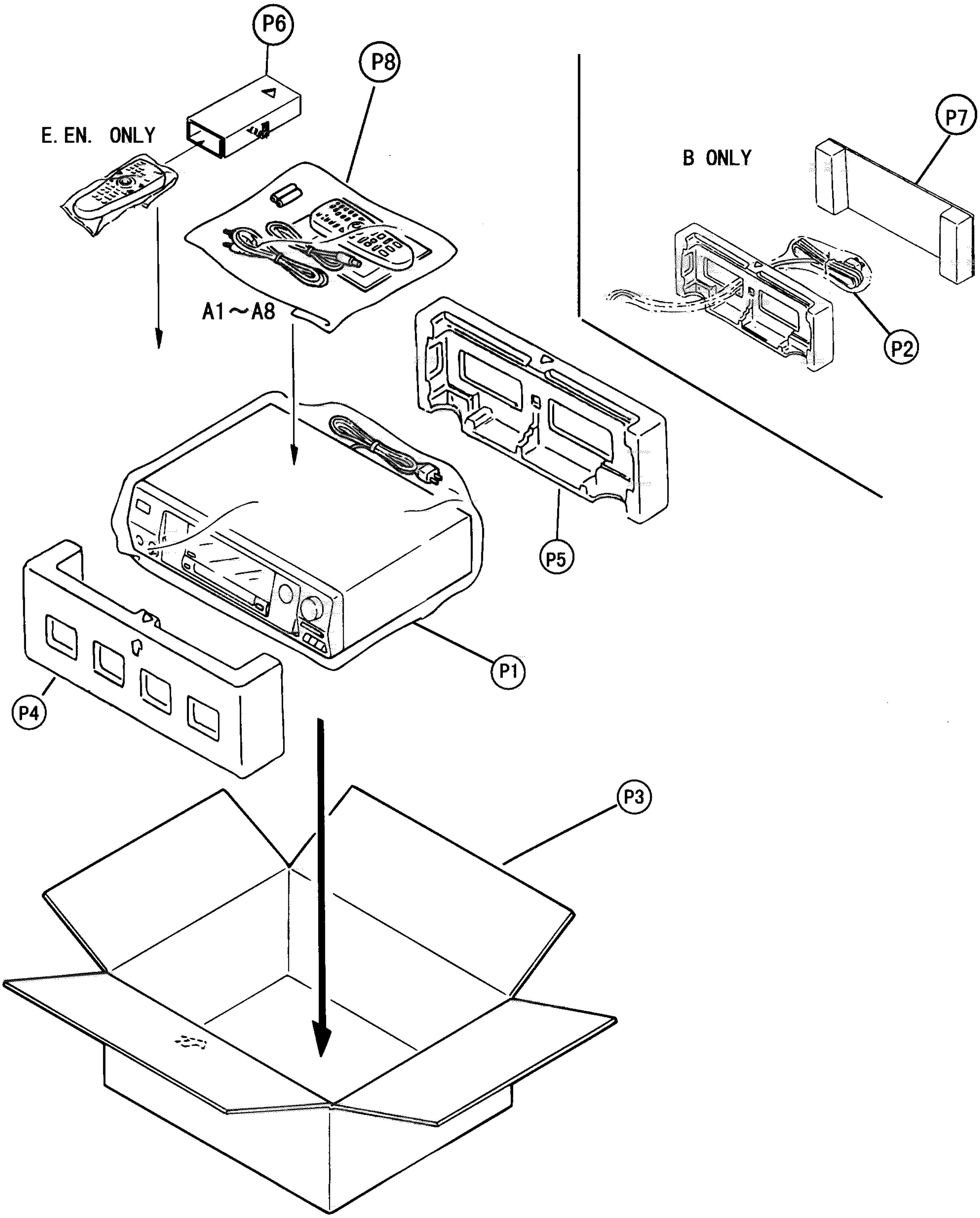
BLOCK NO 04

⚠	Item	Parts Number	Description	Area
	IC521	TC74VHC00FT-X	IC	
	K505	NQR0007-002X	F.BEADS	
	C1521	NCB31CK-104X	C CAPA	
	R1522	NRSA63J-332X	MG.REGISTOR	
	R1523	NRSA63J-222X	MG.REGISTOR	
	R1524	NRSA63J-332X	MG.REGISTOR	
	R1525	NRSA63J-222X	MG.REGISTOR	

-MEMO-

Packing Materials and Accessories Parts List

Block No. M 4 M M
Block No. M 5 M M


P6
P8
E. EN. ONLY
A1～A8
P7
B ONLY
P2
P5
P1
P4
P3

■Accessories Parts List

BLOCK NO M4MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	A 1	PEAC0359-120	SIGNAL CORD	1		
	A 2	QAM0004-002	SIGNAL CORD	1		
	A 3	LET0145-003A	INSTRUCTION BOOK	1	ENG	B E
		LET0145-004A	INSTRUCTION BOOK	1	GER	E EN
		LET0145-005A	INSTRUCTION BOOK	1	FRE	E
		LET0145-006A	INSTRUCTION BOOK	1	DUT	E
		LET0145-007A	INSTRUCTION BOOK	1	SPA	E
		LET0145-008A	INSTRUCTION BOOK	1	ITA	E
		LET0145-009A	INSTRUCTION BOOK	1	SWE	EN
		LET0145-010A	INSTRUCTION BOOK	1	FIN	EN
		LET0145-011A	INSTRUCTION BOOK	1	DAN	EN
		LET0145-012A	INSTRUCTION BOOK	1	RUS XV-501BK ONLY	EE
	A 4	BT-54008-2	WARRANTY CARD	1		B E EN
		BT-54012-1	WARRANTY CARD	1		EE
	A 5	VND3046-001	SERIAL NO.LABEL	1		
	A 6	E43486-340A	SAFETY SHEET	1		B
	A 7	RM-SVD701UE	REMOCON UNIT	1		
	A 8	-------------------	BATTERY	2		

■Packing Parts List

BLOCK NO M5MM

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	P 1	QPC06506515P	POLY BAG	1		
	P 2	QPC01005020	POLY BAG	1		B
	P 3	LE20469-006A	PACKING CASE	1	XV-501BK	B
	P 3	LE20469-008A	PACKING CASE	1	XV-501BK	E EN
	P 3	LE20469-010A	PACKING CASE	1	XV-501BK	EE
	P 3	LE20469-031A	PACKING CASE	1	XV-505GD	B
	P 3	LE20469-032A	PACKING CASE	1	XV-505GD	E EN
	P 4	LE20467-001A	FRONT CUSHION	1		
	P 5	LE20468-001A	REAR CUSHION	1		
	P 6	LE30795-001A	REMOTE CONTROL SHEET	1		E EN
	P 7	LE30674-001A	SHEET	1		B
	P 8	QPC02504015P	POLY BAG	1		

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